The OIL WEEKLY

A Journal for
Oil and Gas Producers and Field Men

HOUSTON
LOS ANGELES
PITTSBURGH
FT. WORTH
TULSA
CHICAGO

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PAGE 19

It's a Wilson

WILSON

Spring-Latch Tongs
Outsell All Others!

Their efficient, automatic closing and latching device, alone, makes them stand head and shoulders above all the rest. . . . . Ask for catalog NOW!

Wilson & Willard Mfg. Co.
MANUFACTURERS

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Distributed By WILSON OIL TOOLS CORPORATION

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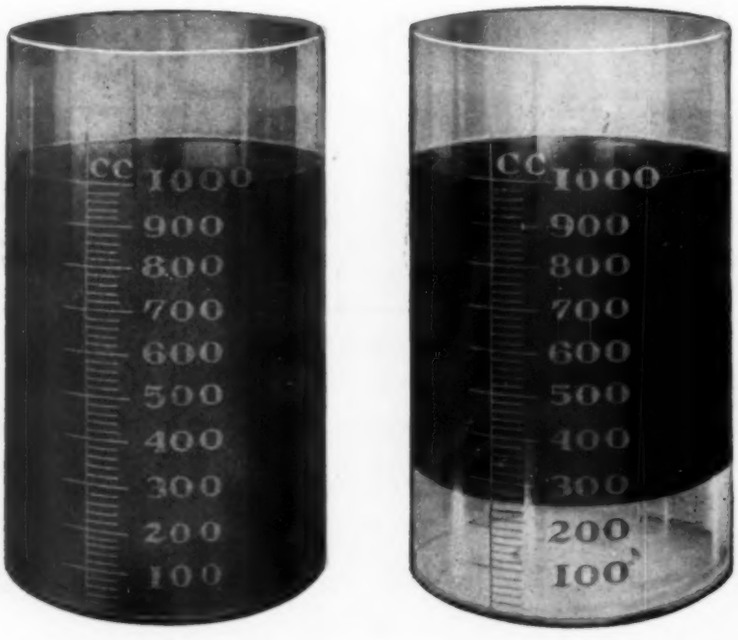


Cut Oil | Pipe Line Oil

JUST ADDING TRET-O-LITE ACCOMPLISHED THIS SEPARATION

In the Cut Oil above is an invisible "trouble-maker"—an emulsifying agent which holds oil and water in emulsion.

TRET-O-LITE, added, instantly and directly attacks this emulsifying agent and neutralizes it. A normal condition is restored and oil and water separate by gravity.

Today, with this simple, economical and complete process available, the thrifty operator recovers every drop of crude from fresh cut oil and tank bottoms. Treating cost is exceedingly low per barrel of recovered oil.

Let us send our nearest field expert to consult with you, without obligation. He can demonstrate, on a sample of your emulsion, what Tret-O-Lite will do, can recommend the best type of installation for your conditions, and can supervise its construction and instruct one of your men in its operation.

Wm. S. BARNICKEL & CO.

St. Louis, Mo.

Office and Plant: Webster Groves, St. Louis Co., Mo.

Tret-O-lite

Reg. U. S. Pat. Off.

THE OIL WEEKLY. Issued weekly by the Gulf Publishing Co., 1716 Dallas Ave., Houston, Texas. Subscription price $1.00 per year; 10 cents per copy. Entered as second-class mail matter December 23, 19.6, at the post office at Houston, Texas, under act of March 3, 1879.

The strongest advertising in existence is back of the steady growth of Gaso sales—although it appears in neither magazine, newspaper or any of the other ordinary advertising mediums.
We refer to the most effective of all forms of advertising—the advertising of the product itself.
Every Gaso pump we have ever built has been produced with the thought that its operation was to be so dependable that other Gaso Pumps would be sold on the basis of it.
So well has this principle worked that for 10 years our sales have kept on growing. Today—thanks to this "advertising", coupled with the principle of fewer but stronger parts and instant accessibility of valves—Gaso Pumps are the acknowledged leaders in their field. We are always glad to send full details—shall we send them to you?
Gaso Pump & Burner Mfg. Company
TULSA, OKLAHOMA

"Masters of Welded Construction"

AMERICAN TANK CO. TRADE Quality MARK WHOLESALE RETAIL

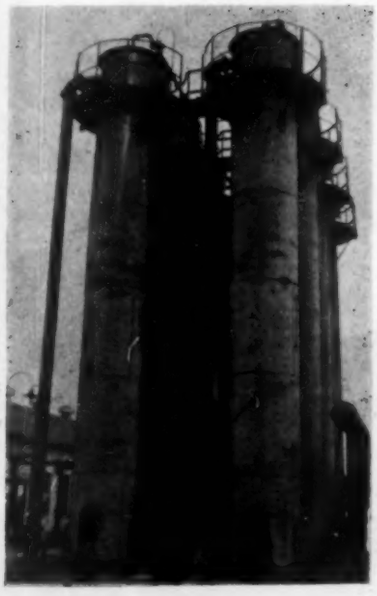
SEE OUR EXHIBIT AT THE INTERNATIONAL PETROLEUM EXPOSITION AND CONGRESS TULSA, OKLA. OCT. 2 - 11

American Tank Co's. Experience as Pioneer Welders of Refinery Equipment Insures Satisfaction

As the pioneer builders of welded refinery equipment, we have gained valuable experience in this now popular type of construction. You get the benefit of this experience in using American Welded Equipment.

All seams in American Welded Tanks and Towers are double butt-welded, which is much stronger than the standard riveted seam. The strength of our double butt-welded seams has been proven in special demonstration and in actual practice. Expansion and contraction due to changes in temperature cannot cause leaks to appear in our welded seams as they often do in riveted seams.

We have many welded refinery towers and tanks to our credit in the Mid-Continent Field. We will be glad to refer you to any of them if interested. Welded construction is fast becoming recognized for its real superiority and our experience gives you the very best of welded construction. Let us figure on your welded equipment requirements, or your general tank requirements.



Battery of American Welded Towers built for Comar Oil Co. Ask Comar!

ROGER L. COLE Wewoka, Cromwell, Okla.
LEUGEMORS TANK CO., Barnsdall, Pershing, Hominy, Wynona, Okla.
M-K TANK CO., Duncan, Ardmore, New Wilson, Healdton, Okla.
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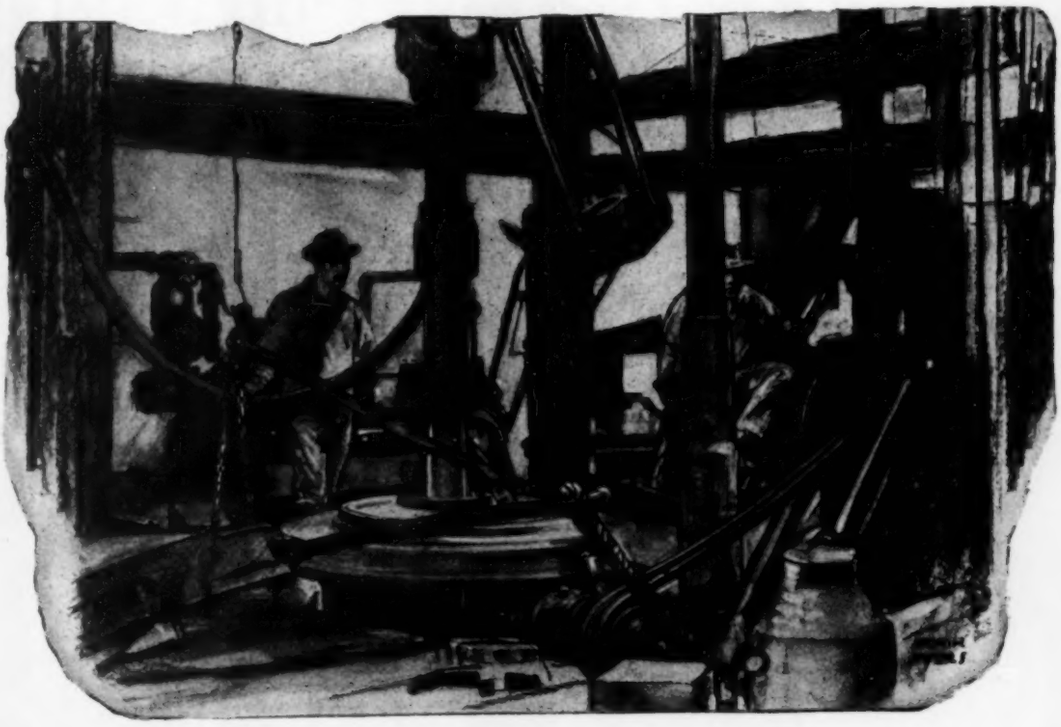

Drill Bits That Last Longer

Every conscientious drill bit manufacturer has cost records covering the dressing of drill bits. If even a small percentage of these dressings can be avoided, you know the savings effected will mean much to the operator and go far toward popularizing your tools. Why not put your drill bit steel problems up to our metallurgists for solution? We make no charge. Other bit manufacturers have done so to their profit. Ask for booklet, "Agathon Alloy Steels."

AGATHON STEELS

THE CENTRAL STEEL COMPANY, Massillon, Ohio

Swetland Bldg., Cleveland
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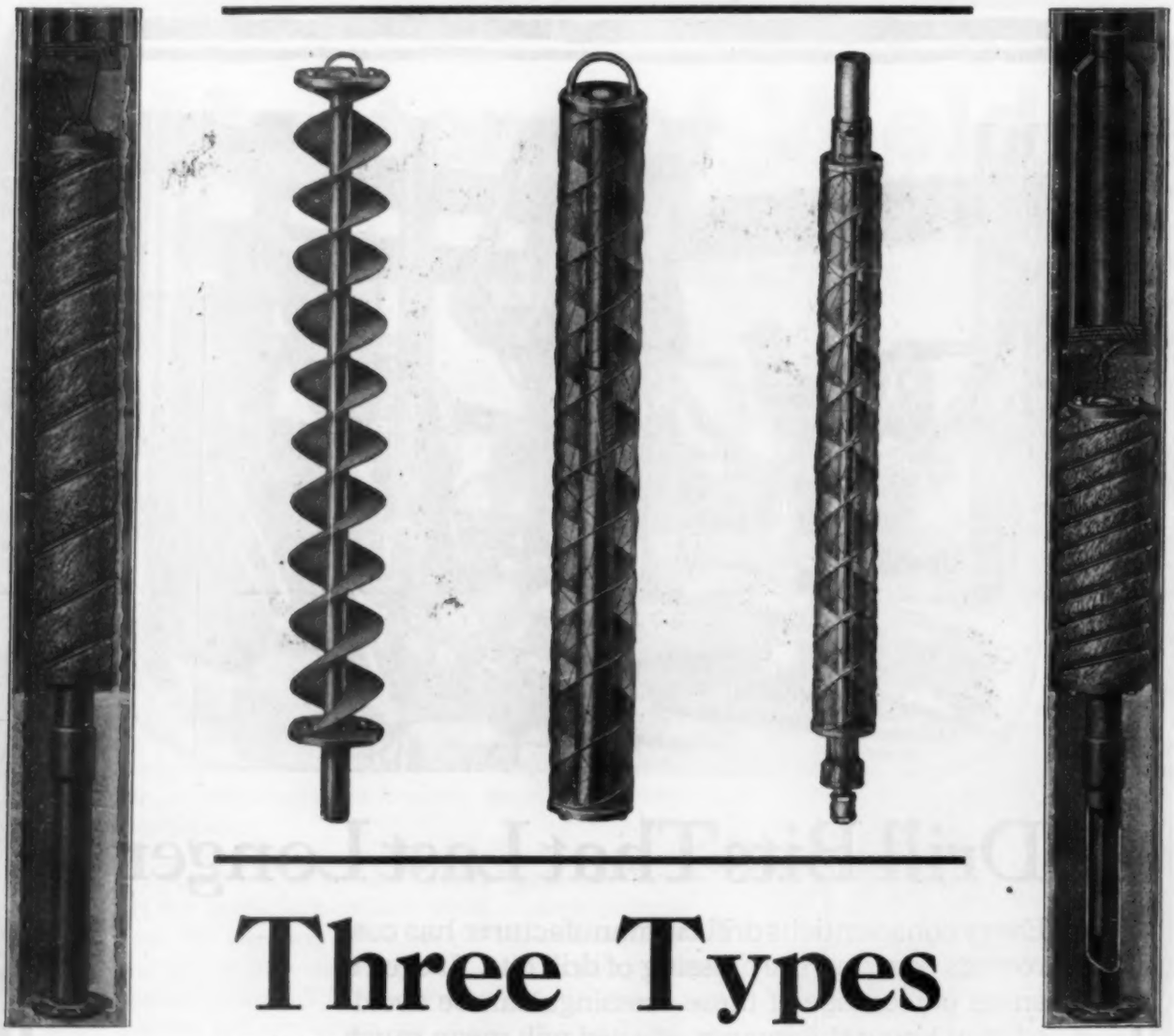
AGATHON ALLOY STEELS



Three Types

Of GUIBERSON Bottom Water Plug

The GUIBERSON Bottom Water Plug is made in three styles to serve every possible requirement of the industry. The Standard Plug (left) is for setting off bottom. The Collapsible Core Plug is for setting against extreme bottom, and occupies, when collapsed, only about 2 feet in the bottom of the hole.

The Wash-Down Plug (right) permits washing out of the hole just before setting. This plug is run in the well on a string of tubing, through which the hole is then flushed before plug is set. A right and left hand connection permits of unscrewing the tubing, after plug is set.

Fully patented. Stocked by all leading supply houses.

THE GUIBERSON CORPORATION

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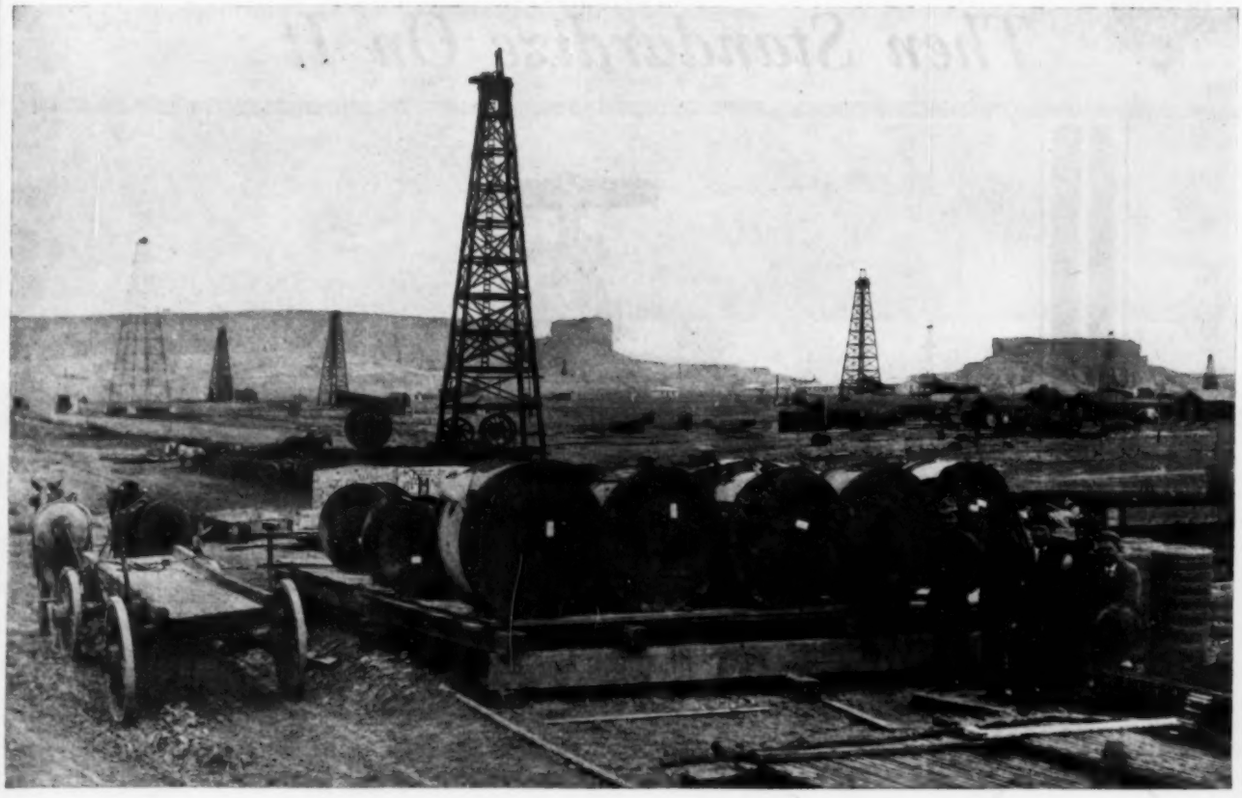
GUIBERSON

BETTER BE SAFE THAN SORRY

Say you saw it in The Oil Weekly

Let the Boys in the MUTUAL OIL COMPANY'S HOME CAMP YARDS, Salt Creek, Wyoming tell you what they think of

WILLIAMSPORT WIRE LINES



Left to right:—Martin Norman, Tool Pusher; Ralph Hershey, Whse. Foreman; Henry White, Field Foreman; E. E. Klahr, Field Supt.; F. H. Smith, Salesman.

Here's the Green Drilling Company's Camp, near Castle Rock. They not only believe in preparedness as evidenced by the large stock of Williamsport Lines in the foreground, but in protection as to grade of lines they put into operation.

When you put a Williamsport Line into service you KNOW for a certainty the grade. No other make of lines give you this protection.
Send for interesting literature telling why Williamsport is the Line you should use.

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WILLIAMSPORT

SERVICE IN EVERY IMPORTANT FIELD

By Invitation Member

Choose The Right Valve— Then Standardize On It

There is a type of Darling Gate Valve to meet every condition in oil field, pipe line and refinery service. The Valve shown here is our No. 101 Extra Heavy Gate Valve, tested 1,000 lbs. water pressure and recommended for working pressures not exceeding 500 lbs. oil or gas.

DARLING

Each and every Darling Gate Valve of every size and type is tested at its rated test pressure and held under this pressure until inspection is completed.

Figure out what a saving you'd have by using long lived valves—over a period of many years. It's a saving that every sensible oil man is looking for. To realize such a saving, there is just one thing to do—select the valve that gives long, efficient service—and then standardize on it.

Use the Darling Gate Valve—its life is far longer than most other valves. "Darling" means real economy especially in those lines where a valve failure may mean a loss of many dollars in delayed production.

Talk with anyone who has used the Darling Gate Valve over a period of years—talk with anyone who has used Darling alongside of other makes. They all say that the Darling Gate Valve reduces production losses to a minimum—lasts far longer than most makes—and seldom needs repairing or replacing.

If you are interested in details of construction write us for catalog.

DARLING VALVE AND MANUFACTURING CO.
WILLIAMSPORT, PA.

NEW YORK CHICAGO PHILADELPHIA OKLAHOMA CITY HOUSTON

Say you saw it in The Oil Weekly

The Deepest Well Ever Sunk in Oklahoma Was Drilled With an Ajax Drilling Engine

This deep well, sunk by the Kingwood Oil Company, made several records for the operators and also for the engine that stood the brunt of the work.

A few of the specifications of this record well are—the rig contained 100,000 feet of lumber, total depth of the well 5,281 feet. The first 5,000 feet was drilled in 175 days, the fastest drilling time on record for cable tools, the last 281 feet in 60 days. In the whole 235 days of drilling only one shut-down of 5 hours was necessary, and that for fishing. 246 tons of casing were used, yet not a foot of it was lost.

This well is located in the northwest corner of the northeast forty of the southwest quarter of Section 7-7-10, east Hughes County, in the southwest part of the Okmulgee District.

The illustration above gives a general idea of the size of the rig and the equipment used.

Field operators realize that Ajax Drilling Engines give steady day in and day out service. They always specify Genuine Ajax replacement parts when repairing or overhauling their engines.

Distributed by

National Supply Companies

in every oil field

Manufactured by

Ajax Iron Works

Corry, Pa.

34104

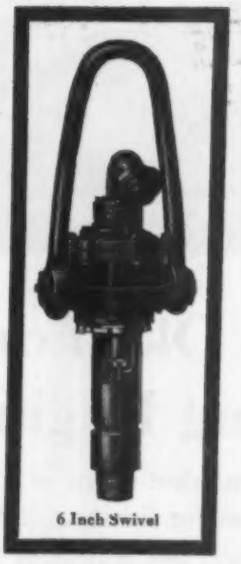
AJAX DRILLING ENGINES

Insist on Genuine Ajax Replacement Parts

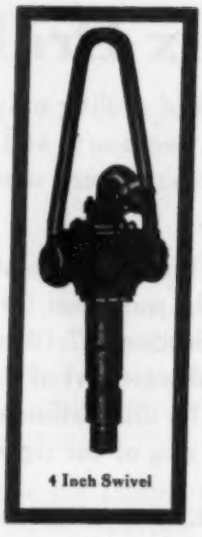
LUCEY

equipped with

TIMKEN
Tapered
ROLLER BEARINGS



6 Inch Swivel



4 Inch Swivel

Some of the Advantages of the New Lucey Rotary Swivel—

1—This swivel built in two sizes—4 inch for use with 4 inch drill pipe in medium depth fields; and 6 inch for use with 6 inch drill pipe in deep fields.

2—Has advantage of short overall length, light weight and compactness of design.

3—Note the few parts, the simplicity of packing and adjustment.

4—First swivel built with Timken Roller Bearings. Bearing construction approved by Timken engineers.

5—First swivel with two tapered roller bearings—one for the load and one for the upward thrusts.

6—Six-inch swivel is 5 feet, 9¼ inches long overall, weighs 1150 pounds, capacity of 120,000 pounds.

4-inch swivel is 5 feet, 5 inches long overall, weighs 750 pounds, capacity 70,000 pounds.

Every comparison in length, weight and simplicity with other swivels of equal capacity add to its prestige.

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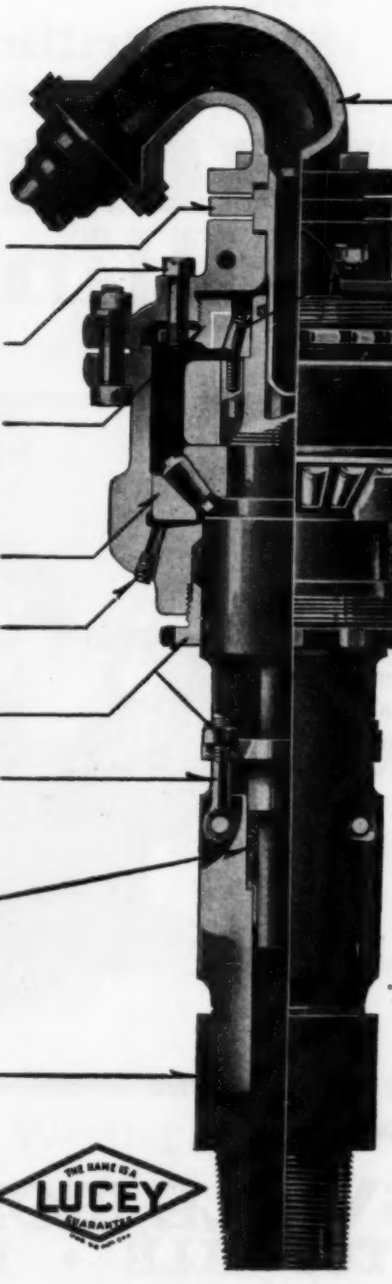
Rotary Swivels



Gooseneck bolted solid to swivel body through flange of wash down pipe.

Flanged end of wash down pipe, no leak here could enter bearing chamber.

Upper TIMKEN roller bearing to sorb upward thrusts and hold stem in alignment

Three cap screws for holding roller bearing adjusting plate.

Roller bearing adjusting plate screwed in cover can be adjusted from outside. By adjustment of this plate all loose or excess motion of the roller bearings which are the only bearings, can be taken up.

Roller bearing chamber.

Lower TIMKEN roller bearing for carrying the load.

Compressed felt washers prevent escape of lubricant.

Drain plug for bearing chamber.

Lock for packing gland imple but effective.

Bronze packing gland adjustable from outside.

Two gland adjusting bolts set inside slot in stems but easy to adjust.

Packing at lower end of wash down pipe. This joint disconnected from bearing chamber by slot through stem where the first signs of leaks will appear and quick adjustment can be made.

Tool joint connection.

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ING CORPORATION.

The Steam Drilling Engine — Plus!

TITUSVILLE *ACME* steam drilling engine

Powerful, smoothly running, efficient as only years of experience can make it—These words sum up briefly the performance you can expect from the new improved type "B" TITUSVILLE Acme Steam Drilling Engine.

All parts are ruggedly constructed to give the utmost in strength —every valve and every shaft is accurately ground and balanced to give the greatest speed and most perfect control.

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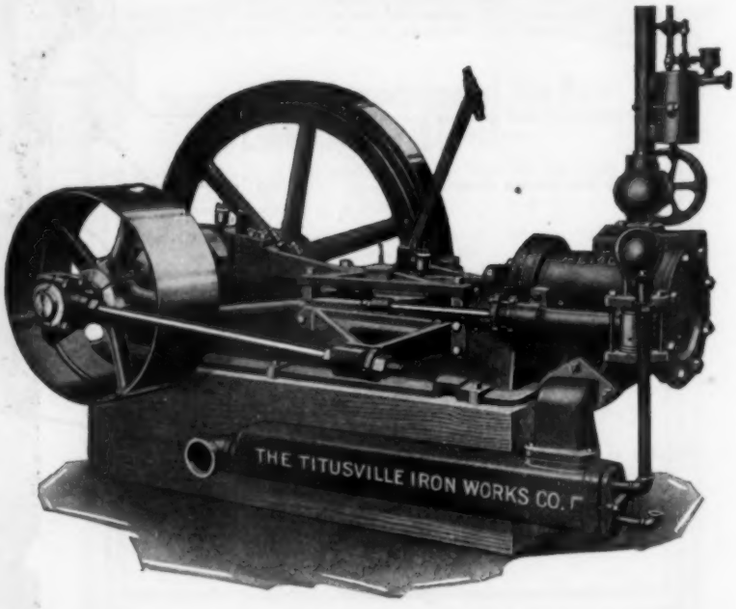

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Oil Country Boilers
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Flapper Valve Pumps
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RUGGED - ENDURING

AFFILIATED COMPANIES FOR DISTRIBUTION
For Mid-Continent, Eastern, Western and Coastal Fields:
The Continental Supply Co.

For California:
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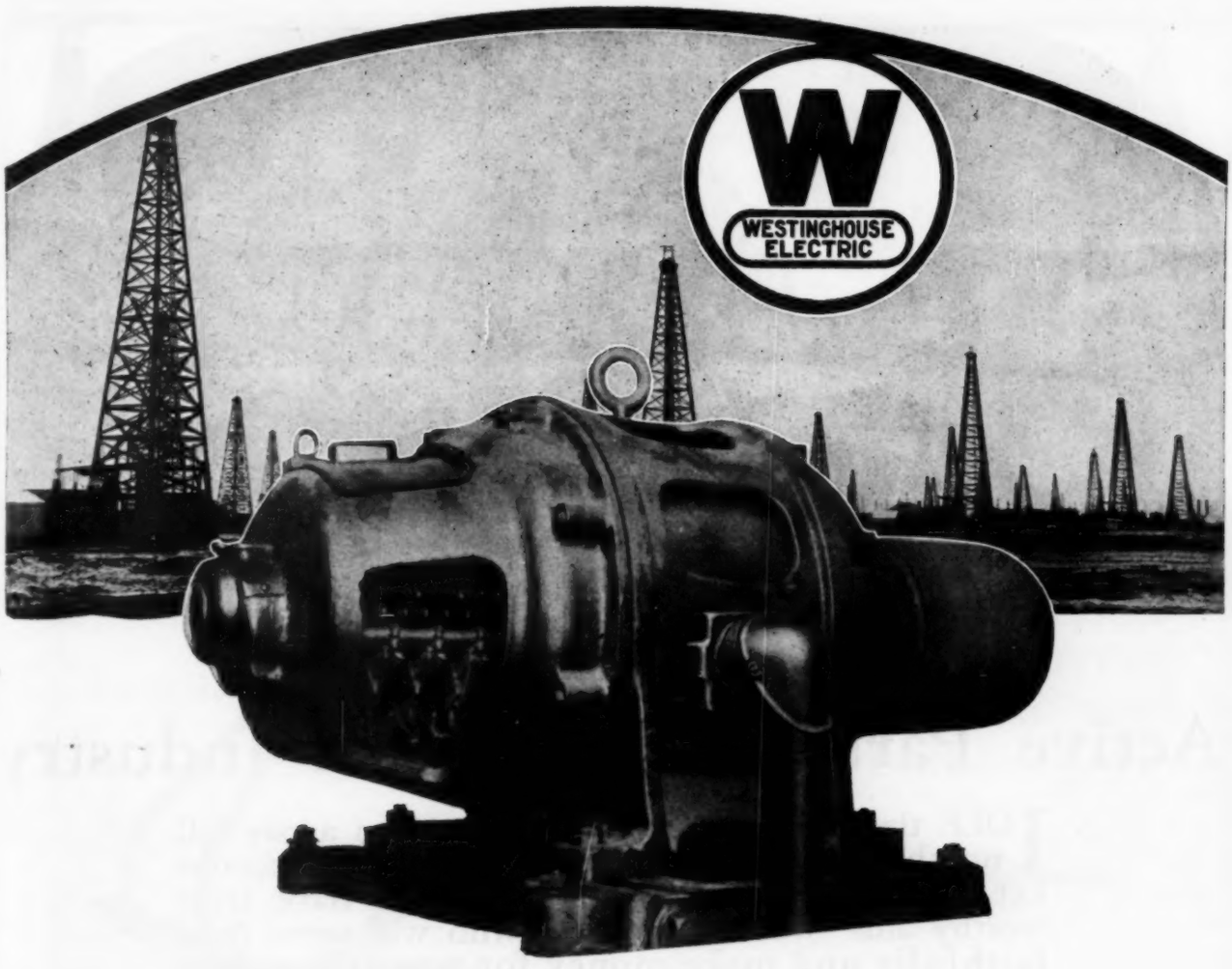
For Export:
The Continental Well Supply Company,
No. 3 Rector Street,
N. Y. City

Say you saw it in The Oil Weekly



70% Westinghouse!

290 wells in Powell Field are pumped by electric drive.

196 of these are driven by Westinghouse motors.

Powell Field has thus expressed its preference for Westinghouse 35-15 hp. motors.

Westinghouse Electric & Manufacturing Company
East Pittsburgh Pennsylvania
Sales Offices in All Principal Cities of
the United States and Foreign Countries

Westinghouse

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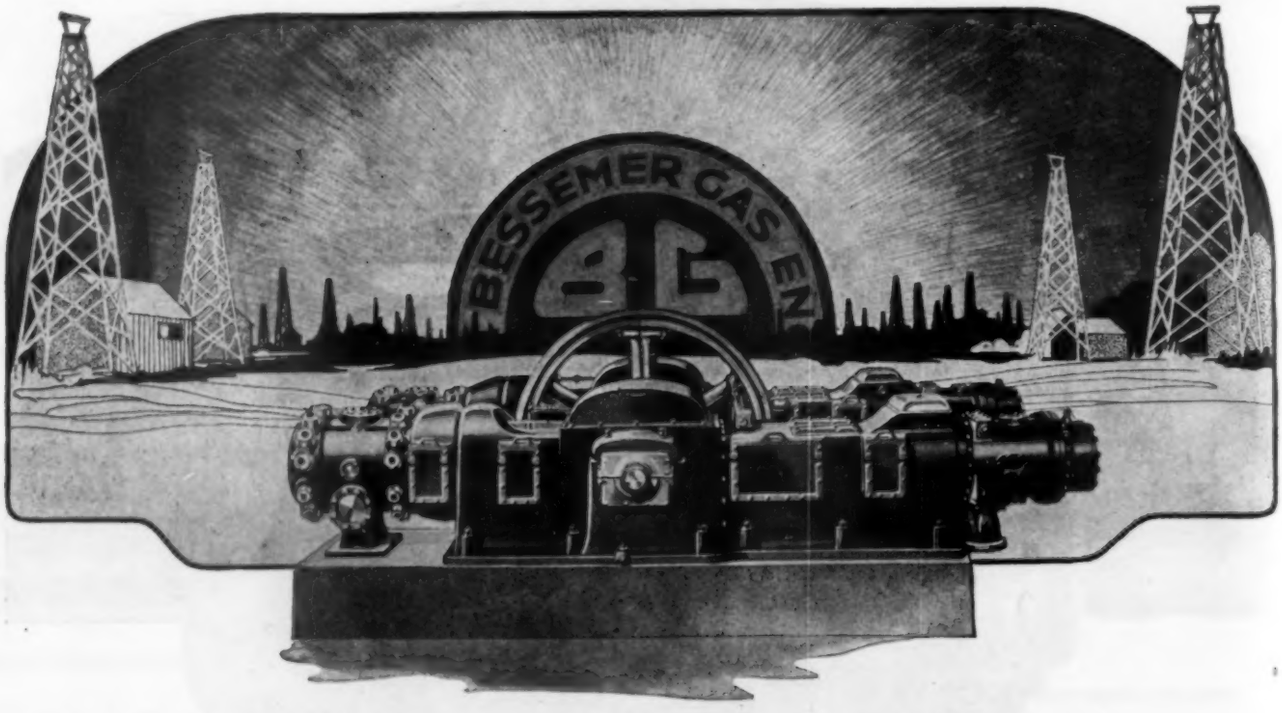

Active Partners in the Oil Industry

IDLE time and inefficiency don't stay on a pay roll, nor should they be carried in the equipment account. Let your superintendents and engineers have trustworthy aids—working partners who will serve them faithfully and make money for you. Give them Bessemers and watch the operating reports jump up to 99% and better.

Bessemer engines, compressors, pumps and pumping powers have met the exacting demands of the oil industry since petroleum came into its own. Their same faithful operation even after years of hard service, their eliminating "time-off" for repairs and their keeping maintenance costs at rock bottom, account for the faith of oil men in Bessemer equipment.

Put Bessemers to work on your leases—they will pay you a profit in dollars and cents.

THE BESSEMER GAS ENGINE COMPANY
62 York Street Grove City, Pa.

BESSEMER

BESSEMER OIL FIELD ENGINES – COMPRESSORS VACUUM PUMPS – ROLLER PUMPING POWERS

Say you saw it in The Oil Weekly

"BETTER ROTARY EQUIPMENT"

The BALANCE

OF YOUR TONG HAS TO BE PERFECT WHEN IN ANY POSITION OR UNDER ANY CONDITION TO INSURE POSITIVE ACTION AND A SAVING OF TIME.

SEE OUR EXHIBIT AT THE

INTERNATIONAL PETROLEUM EXPOSITION AND CONGRESS TULSA, OKLA. OCT. 2-11

"A Perfect Balance, No Interference"

FOR

The NEW EUREKA TONG

"ANY MODEL FOR ANY JOB"

MFG. BY

LeBUS ROTARY TOOL WORKS

ELECTRA, TEXAS, U. S. A.

PRODUCERS!
SAVE Those DOLLARS!

Stop Evaporation Losses

Butler Bolted and Welded Field Tanks equipped with gas tight decks, pressure and vacuum regulators, will prevent evaporation and protect against excessive pressure. The cost of the tanks can soon be saved by eliminating this waste.

Butler Bolted Tanks furnished in capacities from 65 to 10,000 barrels.

Butler Welded Field Tanks can be furnished in capacities from 40 to 250 barrels. They are ideal for flow tanks.

Butler Gas Tight thief hole hatches are regular equipment on our tanks.

Specially machined and properly weighed to withstand two ounces of pressure whether fastened down or not.

Can be opened by placing one foot on the extended lever which easily raises the cover.

These thief hole hatches can be furnished for tanks you may now have.

We are in position at present to make prompt deliveries and attractive prices. We would like to figure on your requirements.

Write nearest offices for literature and information.

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Good crews are entitled to have good tools to work with. If you abide by their choice of tongs

it will be

DUNN

Carried in Stock by

THE NATIONAL SUPPLY COMPANIES

You're Risking More Than the Lives of These Men When You Depend on Wooden Rigs!

THE CASUALTY Risk in Oil Drilling is sufficient to be a matter of concern to every Oil Company. "Pulling in" is one of the greatest hazards. Yet this risk is insignificant compared to the other losses attending the use of wooden derricks.

Every storm topples over its quota of wooden rigs. Every season has its tale of loss by fire of many wooden derricks.

Every month takes its toll in rigs which have served their allotted span of time—a life far short of the production life of the well.

With What Results? An immediate cutting off of production. A loss of valuable time without recession of overhead expense. An equipment cost repeated when the new rig is erected. Lastly, (yet not unheard of) possible failure to continue the hole or ever get the well pumping again.

INTERNATIONAL STEEL DERRICKS (GALVANIZED)

Mean a permanent, yet profitable installation, devoid of upkeep expense. A drilling derrick first—a pumping derrick afterward at lessened expense because the reinforcing members have been moved on to the next job. Fire hazards are reduced to the minimum. Proof against wind and rust. Safe to work under and easy to erect. Write for full information on International "Ideco" Complete Steel Rigs.

The International Derrick & Equipment Co.

Columbus, Ohio — Los Angeles Cal.

Branches and Warehouses:

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HOUSTON SHREVEPORT SMACKOVER

EXPORT REPRESENTATION, 2000-2 Rector St., New York

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(Guide to Purchasers, Pages 97-98)

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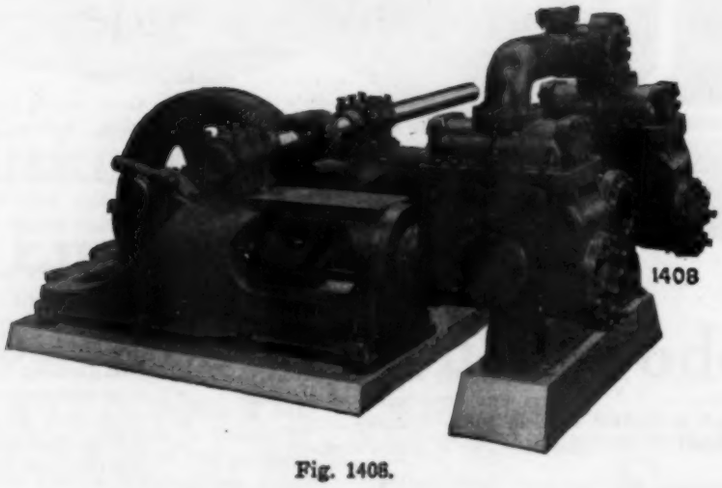

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THE OIL WEEKLY

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Eastern Concern Seeks Crude Contracts

Tide Water Pipe Line Company offers 25 cent premium for high gravity oil on 5 year basis

Houston, Texas, Sept. 3.—While not to be considered as reflecting any sudden upturn in the crude market situation in the East, the offer of the Tidewater Pipe Line Company, crude purchasing subsidiary of the Tidewater Oil Company in the Appalachian region, to pay producers in the Bradford district in Pennsylvania a premium of 25 cents a barrel above the posted schedule for their oil, provided a five-year contract is negotiated on these terms, is indicative of better days ahead.

That the Tidewater Pipe Line Company desires to tie up a sufficient supply of this high grade crude oil for a period of years as a reserve storage there is but small doubt. An agreement of this kind apparently would be more advantageous to the pipe line company than to individual producers for so far the offer has not met with widespread response.

More than any other one thing, this action of the Tidewater may be taken as an indication of what the future trend of the crude oil demand will be in the east and if crude is to be in demand in that section the remainder of the U. S. may also look for a revival in the open market.

Coincident with the news of the offer of the premium in the east came the decision of the Texas Company to do away with proration in the north and central west Texas fields. However, it is not expected that the Texas Company will extend into Oklahoma its 100 per cent purchasing policy, due to that state's steadily mounting production and the apparent inability of other of the larger purchasing companies to materially relieve the situation in the flush areas. Aside from possibly the Prairie, none of the larger purchasers in Oklahoma are evidencing any outward disposition to materially increase crude runs from wells.

To all intents the storage plan instituted by the Prairie is working out to the satisfaction of its customers and already has had a stabilizing effect on the crude price structure. Some have gone so far as to predict that had the storage certificates issued by the Prairie not been in effect at this time the further downward readjustment in the posted price that has been impending for more than a month would have already been a matter of several weeks' history, however, there is little substantiation for the statement that these same certificates, which, by the way, are strictly negotiable at the banks of producers, will continue to bolster up the crude.

The conjecture now in Oklahoma is when will the state's output of crude reach its peak and what will that peak be.

Production of crude oil in Kansas while not menacing continues upward. Some months back the Russell county development and the Rainbow Bend field in Cowley county were conceded to be the two principle factors that would force upwards the Sunflower state's output. The Rainbow Bend field today is the principal factor.

North Texas Feeling Better

The return of The Texas Company to the full payment plan in serving its crude connections in the North and Central Texas fields last week after limiting its purchases to 50 per cent of the oil run since July 15, has materially strengthened the crude market in the various fields affected by the new order, and has given rise for widespread belief among the producers that no further reductions will be made in

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The OIL WEEKLY wants only such subscribers as are engaged in the oil producing or pipe line business, or sub-branches of the producing and pipe line business. It has no desire for investor circulation, and it reserves the right and will exercise the right to reject subscriptions coming from persons whose interest in the oil industry is through the purchase of oil stock.

R. L. DUDLEY, Publisher.

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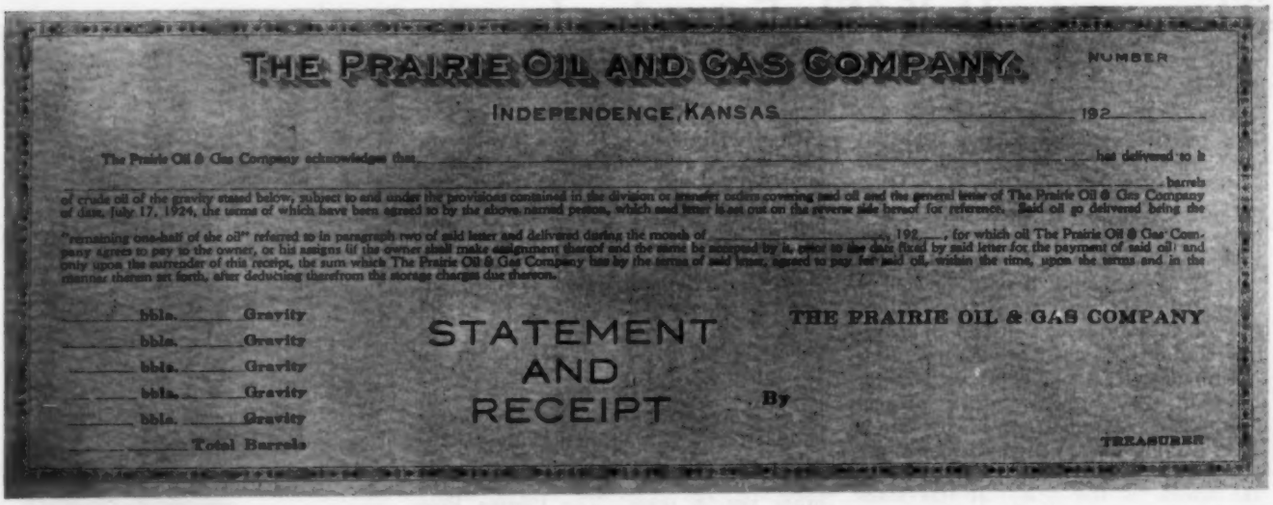


THE PRAIRIE OIL AND GAS COMPANY.

NUMBER

INDEPENDENCE, KANSAS, 192

The Prairie Oil & Gas Company acknowledges that has delivered to it barrels of crude oil of the gravity stated below, subject to and under the provisions contained in the division or transfer orders covering said oil and the general letter of The Prairie Oil & Gas Company of date, July 17, 1924, the terms of which have been agreed to by the above named person, which said letter is set out on the reverse side hereof for reference. Said oil so delivered being the "remaining one-half of the oil" referred to in paragraph two of said letter and delivered during the month of , 192 , for which oil The Prairie Oil & Gas Company agrees to pay to the owner, or his assigns (if the owner shall make assignment thereof and the same be accepted by it, prior to the date fixed by said letter for the payment of said oil) and only upon the surrender of this receipt, the sum which The Prairie Oil & Gas Company has by the terms of said letter, agreed to pay for said oil, within the time, upon the terms and in the manner therein set forth, after deducting therefrom the storage charges due thereon.

bbls. Gravity
bbls. Gravity
bbls. Gravity
bbls. Gravity
bbls. Gravity
Total Barrels

STATEMENT AND RECEIPT

THE PRAIRIE OIL & GAS COMPANY

By

TREASURER

Copy of statement and receipt now being issued by the Prairie Oil and Gas Company covering crude oil received and held in storage by the company. This receipt is negotiable and can be used as collateral by producers in obtaining financial relief, a measure to a large extent heretofore denied many oil men in the Mid-Continent field.

crude prices. However, a number of producers view The Texas Company's action as being an adjustment of its buying plan to present conditions in local fields to offset further loss of crude connections to other major pipe line companies and independent crude buyers by reason of the latter not carrying out a proration policy, and it does not indicate that the crude market is strengthening throughout the Mid-Continent district.

Since The Texas Company resumed its full payment plan, owners of crude stocks have been less inclined to sell all or part of their storage oil at present posted prices, and prices on spot oil in the Wichita-Archer County district have strengthened over the past seven-day period. The demand for spot crude has been good in North Texas in recent weeks owing to heavy movement of refined products to both domestic and export buyers, and since The Texas Company posted its new order prices have increased to $1.45 per barrel for the best grades in Wichita County and five cents under for Archer County crude, owing to the difference in pipe line rates. The natural decline of production in most of the major fields, as result of curtailment of drilling for the past two months, has also contributed to a stronger spot crude market, while Humble, Prairie, Magnolia and a number of independent refiners are making crude contracts over a period, thereby further reducing the amount of oil heretofore thrown on the spot market.

None of the major high gravity oil producing areas in Texas are troubled with an over-production of crude now, but the prices posted by the major pipe line companies in these fields are usually the same as those posted in the upper part of the Mid-Continent, and an upward trend in price is not to be expected until Oklahoma checks its flood of flush production in the Cromwell and Tonkawa fields. Further strengthening of the crude market in Texas fields will undoubtedly result in all the major pipe line companies adopting the same price schedule, as the producers will be in a position to force the hand of the buyers that have cut the price on certain grades of oil and in certain fields below that offered by other purchasing agencies. Magnolia continues to pay $1.25 per barrel for 33 gravity and above in North and Central West Texas fields, while Humble is paying $1.35 per barrel for all grades in Wichita and Archer Counties, Moran district, and the Mexia-Corsicana-Powell district. However, Humble is paying $1.60 per barrel for 36 gravity and above in Eastland, Stephens and Young Counties. Gulf, Prairie, Sinclair and Texas companies are paying $1.50 per barrel for 33 gravity and above in North and Central Texas fields. Prairie and Sinclair are the only major companies limiting purchases to 50 per cent and pro-rating runs.

Gasoline, fuel oil and kerosene continued active during the past seven-day period, and prices on new navy gasoline is now averaging close to 8¼ cents per gallon in North Texas, or an increase of about one-half cent in the past ten days. High gravity gasoline for export delivery is somewhat scarce at 9½ cents, or an increase of about five-eighths of a cent within the past ten days, and exporters are finding difficulty in covering on orders now on hand. Fuel oil has also showed strength lately, and Wichita Falls refiners report very little stocks on hand, with prices averaging close to 85 cents per barrel. Export buyers are expected to be in the market for some weeks to come for kerosene and 64-66 gravity 375 end point gasoline, but are withholding orders in anticipation of somewhat lower prices early in September.

Softer in California

There was a slightly softer feeling in the refined markets in California the past week. Products are not moving quite as freely as was the case some two or three weeks ago. The withdrawal of gasoline from storage during July apparently had no effect on the market. It is reported that there are several tankers idle which owners would like to load for Atlantic coast or foreign ports, but conditions are such that they are not needed.

There is a feeling in California that the state's stocks of crude will be added than 500,000 barrels. If this proves to be correct, some of the purchasing com- to during August, probably not more

Notice is hereby given that from and after seven o'clock A. M., July 17, 1924, and until further notice, The Prairie Oil & Gas Company will purchase crude oil in Oklahoma, Kansas and Texas under the following conditions:

1. One-half of the oil run for its account will be paid for in cash on the regular crediting dates under the terms of the Company's division order and at The Prairie Oil & Gas Company's posted market price in effect on the day the oil is run into the pipe line.

2. The remaining one-half of the oil delivered by the producer to this Company shall be held by The Prairie Oil & Gas Company for the credit of the owner of said oil, subject to the following conditions:

3. The owner agrees to sell to The Prairie Oil & Gas Company and The Prairie Oil & Gas Company agrees to purchase and pay for the one-half of the oil covered by Paragraph Two hereof on any day it may elect within one year.

4. Payment for oil received under Paragraph Two hereof will be made at The Prairie Oil & Gas Company's posted market price for oil of the same kind and gravity as that theretofore received from the producer's tanks, in effect on the day it elects to purchase said oil, less the usual deductions under the terms of the Company's division order.

5. For all net oil received and held in storage under Paragraph Two hereof and until paid for, there will be a charge of three cents per barrel for each calendar month or fraction of a month said oil is held in storage. This oil will be held at the risk of The Prairie Oil & Gas Company and there will be no other charge for expenses in connection with handling and storing said oil or for insurance or taxes.

6. It is understood that the one year's time hereby granted The Prairie Oil & Gas Company to purchase the oil received under Paragraph Two hereof shall in each case be one year from the last day of the month in which said oil was received. In other words, the quantity of oil credited the producer and not currently paid for in any calendar month shall be considered under contract for one year from the end of that particular month, and The Prairie Oil & Gas Company shall have the continuing right within that year, on any day it may elect, to purchase and pay for all or any part of the oil stored for that month.

7. Monthly statement or receipt will be sent producers, showing the quantity of oil and gravity thereof run during the month and held under this agreement, and when the Company elects to purchase all or any part of said oil, official notice thereof will be published in the "Independence Daily Reporter," Independence, Kansas, at least ten days before the payment will be made, giving the date of election and date of payment, which payment shall be within fifteen days after date of election.

8. The Prairie Oil & Gas Company will recognize no assignment, transfer, conveyance or pledge of any interest in or claim to the proceeds of said oil held in storage hereunder unless made upon the statement or receipt issued by the Company and accepted by it prior to the date of payment for said oil.

9. Current division orders filed with this Company are temporarily modified to the extent that this agreement changes or modifies the terms thereof.

10. This notice is sent you in duplicate. Please note your acknowledgment at the bottom of one copy and return by first mail to The Prairie Oil & Gas Company, Independence, Kansas, retaining the other copy for your files.

THE PRAIRIE OIL & GAS COMPANY.

ASSIGNMENT

For value received, the undersigned sells, transfers and assigns unto

hereinafter called the assignee, all right, title and interest in and to all sums due or to become due the undersigned in payment for the oil covered by the foregoing statement and receipt, and The Prairie Oil & Gas Company is hereby authorized and directed to make settlement with said assignee as provided for in the receipt for said oil, of which this assignment is a part.

Dated.....

ACCEPTANCE

The Prairie Oil & Gas Company hereby accepts the above assignment and order, subject to the terms and conditions of its receipt covering said oil.

Dated.....

THE PRAIRIE OIL & GAS COMPANY.

By.....

Copy of the contract made by the Prairie Oil and Gas Company when buying crude under present arrangements. The contract is printed in full on the reverse side of each Statement as shown above.

Three and a Half Mile Extension In New Mexico Brings New Interest

Artesia, New Mexico, September 1.—The recent extension of the 1900-foot oil sand pay in the Pecos River Valley section of Eddy County, New Mexico, for a distance of about three and a half miles to the northwest by the Picher Oil and Gas Company's wildcat test on government permit land indicates that this new field has possibilities of a large area, and is commanding the attention of numerous Mid-Continent operators. This well is located in the southeast corner of section 12-18-27E, and flowed by heads after drilling two and a half feet in the hard sand to a depth of 1957 feet, with the bailer in the hole. It has since been shut in pending the arrival of a string of casing and the completion of additional tankage, and will then be drilled in and completed. The oil tests about 38 gravity with no water showing, and it is reported that the well has a flow of about 1,000,000 cubic feet of wet gas. The Picher Oil and Gas Company is controlled by interests residing in Picher, Oklahoma.

The Picher well was drilled with a Sparta No. 30 machine, and reported a good show of gas at 812 feet, and traces of oil in a sand at 1675 feet. It has only about 500 feet of casing in the hole, and encountered no water below this depth. The machine used on this well was the first attempt to introduce light equipment in drilling for the 1900-foot pay in the field, and it negotiated the hard formations without difficulty.

The nearest oil production to the Picher well is the Illinois Producers Company's two 1900-foot wells on State land in sections 31 and 32. The discovery well of the 1900-foot sand was brought in by Illinois Producers Company in the early fall of 1923 in the southwest corner of the northeast quarter of section 31-18-28, at 1920 feet, and is estimated good for a 75 barrel pumper with sufficient gas flow to provide fuel for drilling two other tests. In January of this year the Illinois Producers Company's State 2 was shut in as a five million cubic foot gasser at 1825 feet. It is located in the southeast corner of section 25-18-27, and the gas is now being used to drill three other nearby tests. The Illinois Producers Company's State 3 came in as an oil well last April from sand at 1947-93 feet, and flowed over the cable tool derrick when given a shot of 130 quarts some months later. This third test is located in the southeast corner of the northwest quarter of section 32-18-28, and is only pumped about one day in the week, or just enough to fill the fuel oil requirements for other wildcats drilling on the east side of the Pecos River. It is making some gas, and the agitation of the pump starts the well to flowing. The Illinois Producers Company's State 4, located 500 feet east of No. 3, is drilling at 1260 feet, and the same company's State 5, located 500 feet south of No. 3, is drilling at 230 feet.

The Illinois Producers Company has filled all of its lease storage, and its wells will remain shut in until a proposed pipe line to the town of Artesia, a distance of about 15 miles, can be completed. It is reported that citizens of Artesia have raised $22,000 to build this line to the town, where a loading rack can be made available on the Santa Fe railroad. A small refinery is also being contemplated for erection at Artesia in the near future, while it is understood that a portable plant similar to one now in use in the Luling, Texas, field may also be brought to Artesia.

The New State Oil and Gas Company, which is owned by business men of Roswell, New Mexico, spudded in a test late last week on State permit land in the southwest corner of section 4-18-29. Walker-Mitchell and others are drilling below 400 feet on a wildcat test in the southwest corner of section 28-18-28, while Oscar Howard and associates' State 1, northwest corner of section 22-18-27, is drilling below 1370 feet, and using gas for fuel.

The Ohio Oil Company is reported to have agreed to drill three tests on the east side of the Pecos River in Eddy County, and will probably announce the location shortly.

panies soon will be forced to build some storage or make arrangements to use storage owned by others. It is estimated that there is approximately 15,000,000 barrels of empty storage in the state at this time, but most of this is concrete reservoir space, which the companies dislike very much to use for storing Los Angeles Basin crude, due to its high gasoline content. The steel storage situation in the state is becoming acute—more is needed and if production does not decline at a greater rate, tanks will have to be erected.

Picher Oil & Gas Company's wildcat producer in Eddy County New Mexico, making a five minute head recently while bailing.

Members of the drilling crew on the Picher Oil & Gas Company's New Mexico, with Emery Carper of Roswell, drilling contractor, on the left and R. L. Hall (center) driller.

U. S. Uses 66 Per Cent Of Petroleum Consumed

Washington, D. C., Sept. 1.—Something over 38,000,000,000 gallons of petroleum and petroleum products were consumed throughout the world during the calendar year 1923, according to an estimate made by Homer S. Fox, petroleum specialist of the department of Commerce. Of this total, the United States consumed over 25,000,000,000 gallons, or 66 per cent, in addition to more than 1,500,000,000 gallons of bunker oil shipped at United States ports for the use of vessels engaged in the foreign trade, which would bring the total American requirements up to 70.2 per cent of the world figures. Great Britain, Russia, Canada, France, Mexico, British India and Argentina, in the order named, were the next largest users of these products.

August Adds to Demoralized Market

Output of U. S. during month reaches high stage of year—over 2,000,000 barrel increase

WITH decreases in production reported from but two producing sections of the country, total recovery of crude oil from all districts in the United States reached the highest figure for August that has yet been recorded this year. The combined output of all fields totals 64,266,014 barrels as compared with 61,973,079 barrels during July, an increase of 2,292,935 barrels.

Simultaneous with this increase is a corresponding rise in field statistics: Approximately 400 more completions were reported for August than for July, and the bulk of the increase consisted of producing wells.

Such a situation seems paradoxical when all the facts pertaining to it are analyzed. Crude prices in general are lower than they have been at any time previous during the year. Proration plans have been in operation throughout the Mid-Continent throughout the month, and practically all the larger companies have been limiting the amount of oil bought. Besides this, stocks of both crude and refined products are increasing and have not shown much tendency toward lowering at any time during the past several months. At least two facts are impressed by the situation, both of which are worthy of study: The price of both crude and refined products is determined by the fundamental economic law of supply and demand, but the price of crude oil and refined products does not influence crude production—at least the price does not affect the amount of crude taken from the ground. The amount of oil being produced at this time, together with the amount of field work reported for the past month indicate that the production end of the industry has not yet reached the point where it can control production according to the supply already on hand. Whether or not this is possible is yet to be demonstrated. Certain readjustments in leasing contracts would undoubtedly have to be made in order to control drilling, but such adjustments seem possible.

By far the greatest increase for August came from Oklahoma. In that state the phenomenal rise in production from Tonkawa is the outstanding feature. As a result of increases from this field, with the daily output of the Cromwell field in Seminole county, total production for the month ran higher than it ever has in the history of oil production in the state.

A grand total of 16,787,621 barrels of crude was recovered from Oklahoma fields during August, an amount exceeding that reported for July, by 1,601,166 barrels.

AUGUST U. S. PRODUCTION

Following is the gross estimated production of crude oil in the United States for the month of July as compiled by The OIL WEEKLY:

	Barrels
California	19,258,440
Texas	11,948,452
Oklahoma	16,787,621
Mountain States	3,866,537
Arkansas	4 483,189
Eastern States	3,317,000
Kansas	2,640,828
Louisiana	1,954,946
Total	64,266,014
July	61,973,079

A compilation shown elsewhere in this issue of The Oil Weekly gives the total output of the Tonkawa field at 1,605,490 barrels as compared with the recovery of 1,223,750 barrels for July. This increase is due wholly to the discovery of deep sands at Tonkawa.

The Cromwell field shows increases approximating 700,000 barrels for the month. An extension well that added approximately one mile of proven territory to the field almost doubled the potential producing area. Seminole county led all others in the amount of flush production obtained during the month, with the major part of this production coming from the Cromwell pool.

Burbank showed only 3,037 barrels flush production, an average of less than 80 barrels per completion for August.

Oklahoma led all fields in the number of completions with a total of 471. Of this number 326 were producers, 24 were gas wells, and 121 were failures. Flush production totaled 193,900 barrels.

Arkansas and Eastern States showed decreases approximating 600,000 barrels during August. All fields in Arkansas are practically inactive and each week there is a noticeable decline at Smackover. Continued price declines in all districts east of the Mississippi have brought field work to a standstill and there are few signs of a revival of drilling as things now stand.

Kansas shows a material increase during August as compared with July, the total output of the state being in excess of any other during the current year. In Cowley county, the Rainbow Bend and Eastman pools are responsible for 14,505 barrels of flush production, with other districts contributing additional initial production to bring the total for the state up to more than 18,000 barrels.

Next to Oklahoma, Mountain States showed the biggest increase of any other district, with 563,487 barrels more oil than was accounted for last month. This increase is undoubtedly due to the fact that operators are forced to drill largely during the summer months in the states where bad weather hinders during the winter.

California showed an increase of slightly more than 81,000 barrels for the month. Most of this came from the Dominguez section where drilling has been fairly active. The older fields in the Los Angeles Basin have showed no unusual amount of work. In fact work has been more or less at a standstill in the fields which were so busy last summer.

Texas was up approximately 250,000 barrels. Practically all the old districts either showed decreases or barely held their own, but two comparatively new fields, Reagan County and Luling, added to the total output of the state materially. Reagan County is rapidly coming to the front as an oil producing section, and during August averaged nearly 4,200 barrels daily. Luling maintained a daily average output of approximately 40,000 barrels throughout August, and there is perhaps more field work going on at Luling than at any other single field in Texas.

Gulf Coast showed one more completion during August than in July, but there was a drop of approximately 4,000 barrels in initial production during the past month as compared with July.

The major oil producing areas in the North Texas district registered a slight decline in total monthly production and field operations during August as result of low crude prices and proration of daily runs by three of the major pipe line companies. The total output for August in this district amounted to 2,-

UNITED STATES FIELD STATISTICS

Following are the completions, showing producers, gas wells, failures and initial production of crude by states, except California and Mountain States for the month of August as compiled by The OIL WEEKLY:

States—	Completions	Producers	Gas Wells	Failures	Initial Prod.
Oklahoma	471	326	24	121	193,900
Kansas	93	59	6	28	18,475
Kentucky	177	142	5	30	3,332
Mississippi	4	..	..	4	....
New York	56	56	..	..	306
Ohio	254	169	54	31	3 536
Pennsylvania	226	195	14	17	635
Tennessee	..	..	..	..	....
W. Virginia	153	45	69	39	574
Louisiana	58	30	14	14	17,997
Illinois	21	13	2	6	637
Indiana	11	9	..	2	109
Arkansas	143	122	4	17	17,715
Texas	374	239	4	131	59,497
Totals	2,041	1,405	196	440	316,713

PAST TWELVE MONTHS

The record for the past twelve months is an interesting study for comparison purposes, the following table giving field statistics for all states in the Union with the exception of the Mountain States and California:

Month—	Completions	Producers	Gas wells	Failures	Initial Prod.
August	1,210	939	189	364	506,815
September	1,546	990	292	264	631,453
October	1,078	633	181	264	396,135
November	1,038	760	25	253	562,231
December	1,447	1,032	50	355	224,794
January, 1924.	926	554	153	219	71,781
February	1,105	798	40	267	183.204
March	1,510	948	211	351	293,772
April	1,634	1,084	187	363	280.160
May	2,431	1,605	273	553	343.531
June	1,808	1,215	193	400	182,750
July	1,637	1,087	168	382	203.875
August	2,041	1,405	196	440	316,713

Visitors at Tulsa Show To Be Treated as Guests

Tulsa, Okla., Sept. 2.—Preparations for the housing of 200,000 visitors during the ten days of the International Petroleum Exposition and Congress in Tulsa beginning October 2, are being made by the housing committee of the oil show. There will be no delays or inconveniences this year in caring for the great crowds of oil and gas men and lay visitors that will flock into Tulsa that week, according to General Manager E. F. McIntyre. The committee will have every detail arranged before the opening of the show, and are preparing for a record-breaking attendance.

One hundred and four hotels of widely varying capacity, but uniformly excelent service, have been listed by the committee. A carfeul check will be kept of reservations. But the most important single feature contributory to the success of the plan will be the listings of rooms in private houses, which have been offered by Tulsa and exposition boosters. Last year the request for rooms was answered with four rooms to every visitor, and the citizens have given ample assurance that their response this year will be no less enthusiastic. The prices of both hotel and private rooms will remain exactly the same as under ordinary conditions.

Visitors and delegates who have not planned to remain with friends in the city are asked to report to the down town headquarters directly upon their arrival in Tulsa. They will be conveyed at once by automobile to a comfortable and attractive room. The cars are another feature of the volunteer service of the Tulsans.

"Every person who comes to Tulsa during the exposition will be considered as the personal guest of the city and of the oil show," stated McIntyre. "No oil man need stay away because of fear of sleepless nights, or the usual inconveniences of convention cities. We are making a special point of our housing and food accommodations this fall, made possible through the support of the citizens. We are the hosts of the oil world, and as such plan to treat every visitor as an esteemed guest."

480,985 barrels, as compared to 2,559,325 barrels in July. This decline is equivalent to the production of one day in the district, and can be mostly charged to the Archer County area, which has fallen off for the past three months. As result of production declines the crude market in this district is no longer troubled with surplus output, and evidence to this effect was shown on August 26 when The Texas Company resumed paying in full for all oil run for purchase after having limited its purchases to 50 per cent since June 1 and storing the remainder for the credit of the producers at three cents per barrel per month. Since Texas is running approximately 12,000 barrels daily in the district, its return to the full payment plan will benefit many operators, and have a tendency to stimulate drilling.

Archer County's drilling operations during August were the lowest of any month this year, with only 70 completions reported, of which 39 were oil producers with a combined initial flow of 3,998 barrels. The county showed a drop of approximately 63,565 barrels in August. No new developments of any importance were reported during the past month, but increased drilling is getting under way in the vicinity of six separate wildcat producing areas that promise much activity for the county when high crude prices return.

The south half of Wichita County continues to offer the bulk of new production coming in from that section of the North Texas district, and an entirely new pool was uncovered in August on the M. A. Love farm, W. S. Kennard survey by a wildcat test drilled by Parker Bros. and others. This well tested 150 barrels from sand at 1,812 feet, and is located between the town of Iowa Park and the Hill & Roberts pool. Production in the lower part of Wichita County is mostly assigned to the Electra and K-M-A fields, and both practically maintained their output in August. The Burkburnett field made a noticeable decline in August as result of lack of new production to offset the natural decline of old wells. Young County also registered a drop in August, and only added two small oil producers over the entire month.

The Panhandle district is steadily increasing in drilling activity, with most of the drilling taking place in Carson and Hutchinson Counties. The field is now served by two small pipe lines, one extending to a refinery at Amarillo a distance of about 40 miles, while the other connects the field with the Santa Fe railroad. The carrying capacity of these two lines is more than ample for the present production in the field.

The major oil fields in the Central West Texas district as a whole declined in production in August, and completions were also fewer as result of continued curtailment of drilling and proration of crude runs. However, Stephens and Reagan Counties registered an increase in monthly production as result of the completion of a few large wells. In the former county most of the new production was obtained in the North Caddo field, and from the 3900-foot pay in the Curry field. Eastland County's monthly production slumped to lower levels during August, and drilling was also reduced to a minimum. Two new gas pools were uncovered in Eastland County between the old Ranger and Desdemona fields late in August, and indications are that one of the wells will develop into an oil producer when drilled in. Both are making gas from the 3000-foot pay, and fishing for tools in the hole at last reports.

Reagan County section of West Texas is rapidly forging to the front as a major oil producing area, and during August averaged close to 4,200 barrels of oil daily. The production is now held by only two companies, but wildcat tests are getting under way in all directions from present producing wells in an effort to uncover other fields along the fold. The Texon Oil & Land Company, which discovered the field and now has 48 square miles of leases surrounding it, is negotiating with major companies to obtain a pipe line outlet for the field.

The Richland field furnished the bulk of the new production added to the fault region in East Central Texas during August, but did not register sufficient gain in monthly output to offset the natural decline of the Corsicana-Powell and Mexia fields. Although the Richland field passed the 20,000 barrel mark in daily production late in August, it is not expected to become a disturbing factor in the crude market, and appears to be virtually defined on all sides by small wells. Completions in the Richland field during August added 5,085 barrels of new production from 15 wells, and the monthly output was in excess of 500,000 barrels.

The Corsicana-Powell field is gradually receding in production, and present drilling activity is confined to the development of the shallow sands known to exist in various parts of the structure. The Mexia district failed to contribute any important developments during August, and sustained a drop in production.

Complete statistics for August begins on page 51

Standard and Midwest Officials Have Meet

Casper, Wyo., Aug. 30.—The semi-annual business conference of officials of the Standard Oil Company (Indiana) and the Midwest Refining Company held here this week was attended by high executives of both companies. An inspection trip to the producing and refining properties of the companies in Wyoming also was made.

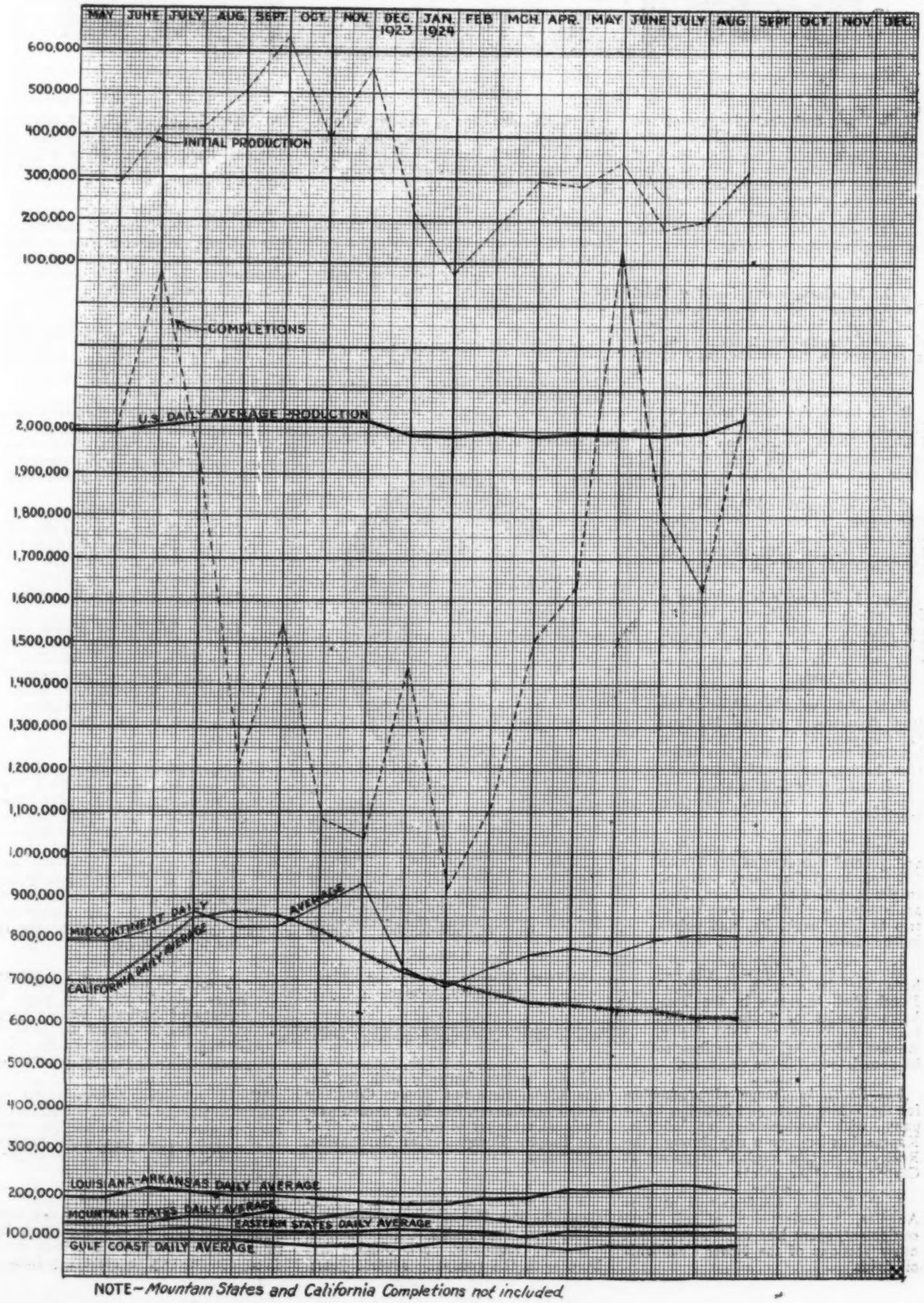
The conference was held under the supervision of Col. R. W. Stewart of Chicago, chairman of the board of the Standard of Indiana. Other Standard officials in attendance included Dr. William M. Burton, president; W. E. Warwick, Beaumont Parks, E. G. Seubert, Allan Jackson, E. J. Bullock and Robert McElroy, all vice presidents, and John D. Clark, vice president and assistant to the chairman of the board.

Midwest Refining Company officials attending the conference included M. K. Blackmer of Denver, chairman of the board; T. A. Dines, president; H. C. Bratschneider and H. G. Naylor, vice presidents; R. O. Deitler, secretary, and J. A. Carroll Jr., auditor. John T. Barnett, president of Mountain Producers, and Judge James Owen, president of Salt Creek Consolidated, also attended the conference.

Austin, Texas, September 1.—Recognition of the Big Lake oil field in Reagan County section of West Texas as a real field was considered attained last week when requests were filed with State authorities at Austin for rangers to check bootlegging and hijacking. One ranger was detailed for duty as result of the request.

Wm. R. Jewell, geologist of Fort Worth, announces that his offices have been moved to 1314 West 13th Street, where he will be at home to his friends.

U. S. PRODUCTION AND FIELD STATISTICS



NOTE—*Mountain States and California Completions not included.*

PERSONAL MENTION-MEN YOU KNOW

E. I. Dyer, technical director of the Union Oil Company of California, who was made a member of the board of directors and member of the executive committee last February, has resigned his position, effective about August 15. He has not announced what connections he will make. He had been with the company fifteen years.

J. L. Minahan, scout for the Tidal Oil Company with headquarters at Fort Worth, is quarantined in a hospital at Corsicana with diphtheria, but is reported to be on the road to recovery.

R. L. Long, Arkansas and Louisiana representative of the Hughes Tool Company, has moved to Beaumont, Texas, and will include that district in his territory.

N. G. Guiberson and R. S. Haseltine, of the Guiberson Corporation offices at Dallas, have been combining business with pleasure in California the past two weeks.

Capt. J. F. Lucey is spending a few weeks in California visiting old friends. Capt. Lucey is trying his hand these days in the production end of the oil business, operating in Arkansas.

T. H. Pyle, superintendent of the land department of the Marland Oil Company of Texas, returned to headquarters at Dallas last week after having accompanied the body of his wife, who died in Dallas recently, to Wilmington, Delaware, for burial.

Frank T. Pickrell, vice president and general manager of the Texon Oil and Land Company, returned to headquarters at Big Lake, Texas, late last week after a two weeks trip to Pittsburgh, Pa., and points in the East.

Henry Van der Weerd, who has been associated with the Royal Dutch-Shell interests in the Tonkawa district of Oklahoma, has been transferred to Balik-Papan, Borneo, where he will continue to be associated with the company.

Lee Scott, in charge of production for the White Eagle and Refining Company, with headquarters at Wichita, Kansas, has been on a trip through the Rocky Mountain region, stopping at Casper and other points.

J. P. Ratigan, headquarters at Los Angeles, manufacturer of oil field equipment, spent last week at Taft and other sections of the North California oil fields.

J. H. Jenkins, general manager of the Texas division of the Tidal Oil Company with headquarters at Fort Worth, is visiting the New York City headquarters of the company.

Frank E. Kistler, chairman of the board of directors of the Producers and Refiners Corporation, has returned to company headquarters in Denver after an inspection trip through the Salt Creek, Wyoming, field.

Ellsworth McGowan has been made assistant secretary of the Marland Oil Company of California. He makes his headquarters at Los Angeles.

C. C. HERNDON

Of Tulsa, Oklahoma, Vice-President of the Skelly Oil Company

J. G. Tooker, formerly with the Salina Light, Heat and Power Company of Salina, Kansas, has been named new business manager of the gas division of the Empire Companies at Bartlesville, Oklahoma.

E. H. Adams, manager of gas operations for the Union Oil Company of California, has resigned his position with the company. Mr. Adams has been with the company several years.

William Schwemlien, chief engineer of the Parkersburg Rig and Reel Company, of Parkersburg, West Virginia, is on a business trip through the Mid-Continent territory.

C. A. Perryman, general sales manager of the Wickwire-Spencer Steel Corporation, is away from company headquarters in New York on a tour of the oil country.

J. T. King of Okmulgee, Oklahoma, president of the Kingwood Oil Company, was in Tulsa last week in connection with company buisenss.

L. A. Warren, formerly sales manager for the Marland Refining Company of Ponca City, Oklahoma, now is general manager of the T. T. Eason Oil Company of Enid, Oklahoma.

D. K. Bell, president of the Clifford-Bell Petroleum Company of Wichita Falls, departed last week on a business trip to New York City and other points in the East.

George W. Shaffer of the Shaffer Specialty Company has returned to Tulsa, after a vacation in Colorado, where he was with his brother, M. R. Shaffer, of Bartlesville, Oklahoma, superintendent of production for the Empire Companies.

Chas. Carter, drilling contractor and operator, who has been making headquarters at Laredo, Texas, recently, is in California, radiating in all directions from Los Angeles.

W. I. Corlett, secretary and treasurer of the Amicable Petroleum Company of Dallas, is spending his vacation in seeing the sights at the various summer resorts in California.

A tour of the Rocky Mountain States has recently been made by a party of National Supply Company officials, headed by John A. Geismar of Toledo, Ohio, vice-president and general manager.

W. H. Johnston, expert driller for the U. S. Bureau of Mines, returned to his headquarters at Dallas last week, after spending his vacation in making an automobile trip to his former home in California.

A. C. Diercx, president of the Honolulu Consolidated Oil Company, has returned to headquarters at San Francisco, after a trip to eastern points.

Oklahoma to Reach 600,000 Barrels

Settled production in state shows remarkable average—Only small variation over month

By Grady Triplett

Tulsa, Oklahoma, Sept. 1.—Every indication points toward an increasing output from Oklahoma oil fields. The daily average production is now in excess of 550,000 barrels, a high mark for all time for Oklahoma. It seems safe to set down 600,000 barrels daily as a figure sure to be reached during the coming four months. If that figure is surpassed, it will occasion no surprise.

Two factors bear out the upward tendency of Oklahoma production, with 600,000 barrels daily as a figure within easy reach. These are the tremendous total of what may be termed "settled production" and the promise of still higher yield from the Tonkawa deep sand, with another jump from the Cromwell pool when it reaches its next peak.

Of these two factors, perhaps the most important is that of settled production. Of the 550,640 barrels (a figure which may be too low when this is in print) of Oklahoma production 379,815 barrels is coming from 57,443 wells, whose daily output runs from a half barrel to no more than 50 barrels daily. This leaves 171,825 barrels, coming from 440 wells, whose daily output is from 50 barrels daily to the 4,372.5 barrels, which is the daily average for each of the 14 wells in the deep sand at Tonkawa.

It is this 379,815 barrels of settled production which is the foundation of the mounting production in Oklahoma. These are to a large extent pumping wells. Their daily output shows such small variation that a period of months must be taken in order to calculate an appreciable decline in output.

Older Fields Low

The low well average in Oklahoma is the Rogers County district, where the daily pumping from each well is only three-tenths of a barrel. Nowata County shows but 51 hundredths of a barrel from its 9,090 wells. The 8,330 wells in Washington County produce 7,600 barrels daily for an average of eight-tenths of a barrel daily.

These counties include the older pools of Oklahoma oil fields. From them followed other pools, whose output is now higher than a barrel daily for each well. While the more recent wells at Burbank are flowing, the average well output for that field is just under the 50 barrel mark, with 48.1 as an average. The bulk of Burbank wells are being pumped or have been put on air.

So the list of settled fields in Oklahoma includes the oldest producing territory of the State, as well as a pool, Burbank, which only a year ago had flowing wells and was in its flush days. That the decline of these settled pools will be slow and steady can be understood from the fact that the first wells of Oklahoma are still producing. It is useless to expect Burbank to drop sharply from its 48 barrel well average. During the remaining four months of 1924, the several settled pools of the State should not lose more than the 29,000 barrels, which would leave them with 350,000 barrels daily.

While Cushing has such remarkable characteristics that it may be unfair to take it as typical of Oklahoma oil fields, it is significant that the output of this pool has dropped only 2,000 barrels in two years. Producers there combat the natural decline by constant attention to wells.

In this connection it is well to remember that the pipe line concerns are insisting on keeping all old connections with Oklahoma properties, as they are in other States. So the tendency of producers is to hold up the output of present wells, whose oil is readily taken, rather than to drill other wells on old leases. This fact will make for the slow decline of the settled fields of Oklahoma.

Two New Sources

Beyond the settled production, the peak of Oklahoma output will be determined by the drilling now underway in two fields. These are the Wilcox sand at Tonkawa and the Cromwell field of Seminole County. There are six other pools in Oklahoma, whose daily well average is more than 50 bar-

Sources of the Record Breaking Production of Oklahoma Fields are Shown in the Table Below

Field—	Daily Average Production	Number of Wells Producing	Daily Average per Well
Allen	325	169	1.92
Bald Hill	2,575	974	2.64
Beggs	3,440	482	7.14
Billings	550	69	8.01
Blackwell	5,350	171	31.3
Boynton	1,365	962	1.42
Bristow	35,570	666	21.41
Brock	1,050	47	22.64
Broken Arrow	1,950	376	5.15
Burbank	75,300	1,564	48.1
Cement	1,820	145	12.57
Cleveland	3,785	770	4.91
Comanche	880	48	18.32
Cromwell	56,540	81	698
Cushing	29,200	2,742	9.59
Deaner	9,440	501	18.76
Duncan	7,795	455	16.96
Fox	2,870	94	30.97
Garber	5,000	558	8.96
Gilcrease	7,400	23	226.
Glenn Pool	8,320	2,745	3.03
Graham	13,800	187	73.79
Healdton	13,685	1,999	6.89
Hewitt	19,890	802	24.8
Jenks	2,070	1,095	1.89
Jennings	4,680	340	13.76
Keystone	1,020	123	8.38
Kilgore	170	150	1.13
Loco	2,570	819	3.13
Mervine	530	77	6.88
Morris	3,100	1,050	2.95
Mounds	7,040	373	1.88
Nowata County	4,700	9,090	0.51
Okmulgee	2,300	499	4.6
Osage County	53,590	7,833	6.84
Pickett	890	376	2.37
Quay-Yale	5,150	376	13.25
Red Fork	1,860	736	2.52
Robberson	3,540	199	17.78
Rogers County	1,290	4,286	0.3
Sapulpa	995	339	2.39
Sayre	320	11	28.9
Slick	9,270	736	12.59
South Ponca	965	72	13.44
Stroud	21,900	52	421.15
Tiger Flats	2,395	429	5.57
Tonkawa (deep sand)	61,215	14	4,372.5
Tonkawa (shallow)	24,400	672	36.31
Tulsa	8,990	2,910	3.08
Tussy	595	7	85.14
Walters	1,120	183	6.12
Washington County	6,700	8,330	0.8
Watchorn	1,640	14	117.14
Wewoka	7,735	62	124.74
Totals	550,640	57,883	
Average well production for state			9.51

rels. But the combined output of these is 52,170 barrels daily. Stroud, one of them, has passed its peak and should decline. The Gilcrease-Papoose area, the Graham pool, Tussy, Watchorn and Wewoka are smaller pools, where the well average is high due to there being comparatively few wells producing. While intense drilling may come to some of these pools at some time, there is no indication of it now.

Unless there is continued drilling, the output of these small pools will drop and drop to a greater ratio than that of the settled pools. But they should continue to produce at such a rate over the remainder of the year that their output plus that of the settled pools, will hold close to 400,000 barrels daily.

Tonkawa a Problem

This sifts the trend of Oklahoma production down to the Tonkawa deep sand production and the future of the Cromwell pool. Of these, the one drawing the most attention at present is Tonkawa. Its wells show such high output and such persistent output that they defy predictions. Then sufficient drilling has not been done to determine the extent of the structure from which this deep Tonkawa production is coming.

Although there is yet some controversy on the subject, the majority of geologists are of the opinion that Tonkawa deep production is coming from the Wilcox sand. The formations have been deceptive at Tonkawa because of the absence or only scant findings of the Mississippi lime. The lime is found in uniform thickness overlying the Wilcox sand in other Oklahoma districts. But the lime is little in evidence at Tonkawa.

Geologists, after studying the type of structure and conditions of folding, have decided that erosion has erased the lime over the Wilcox at Tonkawa. One fact in proof of this is the pronounced pitch of the Wilcox at Tonkawa. This sand shows dip of as much as 75 feet from one location to another in the few wells completed. This rate of dip is twice that found in the Hoover sands, from which the shallower wells produce at Tonkawa. Even the Tonkawa sand, between the lower Hoover and the Wilcox, does not show the rate of dip as revealed in the deep wells.

Just as the conditions of folding are similar but not identical in the several producing formations, so the structures have similarity but are not uniform. Not enough drilling has been done to establish the axis of the fold in the Wilcox sand. But the underground map is being shaped to show a lower fold crest that will be parallel with that of the axis of the Hoover formations but the Wilcox axis will be to the northeast of that in the Hoover or Tonkawa sands, the distance of separation yet to be determined.

Neither has the extent of the Wilcox formation been determined. Since its crest will run northeast of that of the other sands, producers are drilling on the theory that its northeast flank will extend beyond the corresponding flank of the shallower fold, perhaps bringing production to some leases, which proved expensive failures in the drilling of the first Tonkawa wells.

Thickness Not Known

Thickness of the Wilcox at Tonkawa is another unknown factor. It has not been drilled through. In fact it has been only touched. The Slick well in the southwest corner of section 35-25-1 west, the first well of the field, is credited with 26 feet of sand. No. 45 of the Wentz Oil Corporation, whose daily output has now reached 10,000 barrels, is producing from only four feet of sand. This is considered the banner well of the field.

In most instances wells from this sand have increased in output as they grew older. The common practice is to finish a well at less than 10 feet in the sand and to permit it to deepen itself. Where wells have not done this, it has been possible to increase production by running the tools and hitting a few licks.

Wells at Tonkawa are being drilled to around 3300 feet with rotary tools. They are completed with cable tools, after rigs have been standardized. Where shallower wells have reached such a low ebb in output that they are not profitable, the practice is to deepen them to the Wilcox. But there are wells being drilled from the surface to the Wilcox, as the shallower wells at Tonkawa have an average daily output of 36.31 barrels.

Oil from the Tonkawa deep wells is similar in gravity and content to that of the shallower sands, testing around 42 degrees Baume.

The Wilcox sand is known in Oklahoma as one having high flush yield with sudden decline. So far it has not shown the latter characteristic at Tonkawa. This undoubtedly due to the fact that few wells have been completed. As 14 wells now have daily output of more than 60,000 barrels, it seems safe to predict 100,000 barrels daily from the Tonkawa deep sand when wells now drilling are completed. Even if this output should prove of short duration (something not indicated from present wells) it will be sufficient to raise the daily output of Oklahoma to a point

With the extent of the structure not determined and the thickness of the sand not tested, it is not improbable that Tonkawa deep production will pass the 100,000 barrel mark.

At Cromwell

Whether it does or not, its high flush point will be just in advance of that at Cromwell. Just now the Cromwell

(Continued on Page 34)

Status of Leases in the Tonkawa Field as of August 30, 1924

Company and Lease—	Location	No. of Wells	Daily Average Production
Amerada Pet. Corp., Bruner	16-10-8	4	2,650
Berry Pet. Co., L. Yahola	22-10-8	1	445
Burk-Greis, E. Brown	10-10-8	2	2,520
Carter Oil Co., L. Roberts	16-10-8	4	3,320
Carter Oil Co., P. Bruner	15-10-8	2	2,125
Carter Oil Co., L. Yahola	22-10-8	1	20
Carter Oil Co., M. Bruner		1	710
Central National, R. Dunn	4-10-8	1	1,340
Cosden O. & G. Co., W. King	22-10-8	2	90
Cosden O. & G. Co., J. Willis	15-10-8	3	1,860
Cosden O. & G. Co., W. Yahola	15-10-8	2	1,340
Gilliland Oil Co., Proctor	16-10-8	2	2,090
Gypsy Oil Co., C. Bruner	16-10-8	5	2,600
Gypsy Oil Co., Stedman	15-10-8	4	2,640
Gypsy Oil Co., Z. Stedman	15-10-8	3	2,200
Hoffer et al., Z. Stedman	16-10-8	4	3,300
Holmes-Jarvis, F. Harjo	21-10-8	2	65
Independent O. & G., L. Harjo	21-10-8	2	190
McMan Oil Co., W. King	22-10-8	4	1,020
McMan Oil Co., L. Little	10-10-8	1	980
Mid-Kansas O. & G., Alexander	15-10-8	4	5,365
Pure Oil Co., Bunner	9-10-8	1	1,420
Roxana Pet. Corp., E. Brown	10-10-8	3	2,800
Shaffer O. & R. Co., W. Yahola	22-10-8	6	5,110
Sinclair & Transcontinental, M. Bruner	9-10-8	1	3,320
Snowden & McSweeney, Tiger	15-16-8	1	1,370
Superior Oil Co., L. Baker	15-10-8	1	2,160
Tidal-Osage, H. Harjo	21-10-8	6	1,510
H. F. Wilcox O. & G. Co., P. Bruner	15-10-8	5	1,980

THESE COMPARATIVE FIGURES SHOW HOW TONKAWA DEEP SAND WELLS ARE HOLDING UP

Company	Well and Location	Date Comp.	Sand Top	Sand Bot.	Inital Prod.	Pres. Prod.
Blackwell Oil & Gas Co.,	1 C SW SE NE 34-25-1w	8-11-24	3975	3982	5,000	6,540
Comar Oil Company,	1W SE NW 34-25-1w	8-19-24	4143	4149	4,400	5,300
Comar Oil Company,	1W SW NW SW 35-25-1w	8-19-24	3958	3977	6,190	5,670
Comar Oil Company,	1W SE NE SE 34-25-1w	8-19-24	3968	3990	6,390	5,320
Comar Oil Company,	4W NEc 3-24-1w	8-11-24	4156	4177	3,915	2,680
Comar Oil Company,	5W NW NE SE 34-25-1w	8-3-24	3975	4000	1,100	2,315
Gypsy Oil Company,	81 NWc 2-24-1w	8-17-24	4132	4136	4,355	4,010
Gypsy Oil Company,	83 NWc NE NW 2-24-1w	8-20-24	4018	4037	4,430	6,115
Pennok Oil Company,	1D SEc 34-25-1w	8-19-24	4077	4080	1,100	2,500
Pennok Oil Company,	4D NEc SE SE 34-25-1w	8-19-24	4013	4020	3,020	3,100
Pennok Oil Company,	7D NEc SW SE 34-25-1w	6-12-24	4139	4160	2,675	3,500
T. B. Slick,	1E SWc 35-25-1w	4-30-24	4060	4086	2,830	2,675
T. B. Slick,	5E SEc SW SW 35-25-1w	8-19-24	4026	4047	2,650	3,525
Wentz Oil Corp.,	45 NEc SW 34-25-1w	8-5-24	4156	4160	6,400	8,240

To Its Uniformly Accurate Openings Between the Wires

IS DUE THE Great Effectiveness of

THE LAYNE

PATENT

Keystone Wire-Wrapped SCREEN

NOTE VERTICAL ALIGNMENT OF LUGS.

This arrangement of lugs permits very great side pressure being put on the wire during the winding process, as the lugs press against adjacent wire at points supported by adjacent lugs, and positively prevents displacement of wires.

The accuracy of the Layne is made possible only by the patented Layne winding machine, by which lugs on the wire are correctly sized and accurately placed, under heavy side pressure, against each other in VERTICAL ALIGNMENT on the perforated pipe, on which the keystone wire is wound. This insures correct, accurate spacing of the wire, and maintains that spacing by preventing displacement of the wire on the perforated pipe.

Uniform accurate openings prevents sand-cutting that would occur from openings too large—and lack of filtration that would be caused by openings too small.

Write for Special Packer and Screen Literature

SECTION OF OLD STYLE LAYNE SCREEN, SHOWING STAGGARD ALIGNMENT OF LUGS.

The heavy side pressure to which the wire and lugs are subjected under our present winding process, would be impossible with this arrangement of the lugs, as the lugs would press against the spaced portion of the screen instead of against lugs. Although our patents have only recently expired on this method of winding, we discarded this method in favor of our present method (vertical alignment of lugs under heavy side pressure) many years ago.

THE LAYNE & BOWLER CO.

FACTORIES:

Houston, Texas Memphis, Tenn.

CRUDE OIL PRICE QUOTATIONS FOR ALL FIELDS

Current Postings

EASTERN STATES

	Sept. 5 1924	Sept. 5 1923
New York Transit	$2.85	$3.00
Bradford (Pa.)	2.85	3.00
Other Pa. Grades	2.75	2.75
Cabel	1.45	1.50
Ragland	.90	.75
Corning	1.75	1.60
Somerset, medium	1.55	1.40
Somerset, light	1.70	1.55

CENTRAL STATES

Illinois	$1.62	$1.67
Indiana	1.63	1.68
North Lima	1.83	1.88
South Lima	1.83	1.88
Plymouth	1.00	1.05
Lodi	1.65	...
Princeton	1.62	1.67
Waterloo	1.10	1.15
Wooster	1.65	1.70

CALIFORNIA

(Crude oil prices at well.)

Los Angeles and Orange Counties

14 to 19.9 gravity	$1.00	$ .60
20 to 20.9 gravity	1.01	.61
21 to 21.9 gravity	1.02	.62
22 to 22.9 gravity	1.03	.65
23 to 23.9 gravity	1.05	.68
24 to 24.9 gravity	1.07	.71
25 to 25.9 gravity	1.10	.74
26 to 26.9 gravity	1.13	.77
27 to 27.9 gravity	1.16	.80
28 to 28.9 gravity	1.19	.83
29 to 29.9 gravity	1.22	.86
30 to 30.9 gravity	1.25	.89
31 to 31.9 gravity	1.28	.92
32 to 32.9 gravity	1.31	.95
33 to 33.9 gravity	1.34	.98
34 to 34.9 gravity	1.37	1.01
35 gravity and above	1.40	1.04
Fuel Oil	1.40	...

WESTERN KENTUCKY

Posted by Indian Refining Company for crude from Allen, Warren, Franklin, Daviess, Barren, Cumberland and Monroe Counties.

36 and above	1.40	...
33 to 35.9	1.30	...
32.9 and below	1.20	...

MID-CONTINENT

(Prairie Prices)

Below 30 grav.	$1.10	$...
30 to 32.9 grav.	1.25	...
33 and above	1.50	...

(Sinclair Prices)

Below 30 gravity	$1.10
30-32.9	1.25
33 gravity and above	1.50

(Texas Company Prices)

	Sept. 5 1924	Sept. 5 1923
Below 30 gravity	1.10	
30 to 32.9	1.25	
33 and above	1.50	

(Magnolia Petroleum Co.)

Below 28 gravity	.90	...
28 to 30.9 grav.	1.00	...
31 to 32.9 grav.	1.10	...
33 and above	1.25	...
Corsicana, light	1.25	...
Corsicana, heavy (at wells)	.90	...
Mexia	1.25	...
Thrall	1.00	...

NORTH CENTRAL TEXAS

(Humble Oil & Refining Co.)

Corsicana, light (Powell)	1.35	1.00
Mexia	1.35	1.00
Currie	1.35	1.00
Thrall	1.00	...

RANGER

(Humble Oil & Ref. Co.)

30 and below	1.00
30 to 32.9	1.20
33 to 35.9	1.40
36 and above	1.60

WICHITA AND ARCHER COUNTIES

(Texas)

(Humble Oil & Ref. Co.)

33 and above	$1.35

SOUTH TEXAS

Mirando (Texpata)	.80	.75
Mirando (Magnolia)	.75	...

SOMERSET

(Grayburg Pipe Line Company)

Under 28 gravity	$ .90
28 to 30.9 gravity	1.00
31 to 32.9 gravity	1.10
33 and above	1.25

GULF COAST

Grade "A"	1.35	...
Grade "B" at Blue Ridge, Hull and Pierce Junction	1.15	...

LULING

All gravities	.90	...

LOUISIANA-ARKANSAS

Caddo

38 gravity and above	$1.35	$...
28 to 37.9 gravity	1.25	...
32 to 34.9 gravity	1.15	...
Below 32 gravity	1.00	...
35 gravity and above	1.35	...

Homer

	Sept. 5 1924	Sept. 5 1923
33 to 34.9 gravity	1.25	...
31 to 32.9 gravity	1.15	...
Below 31 gravity	1.00	...

COTTON VALLEY

All grades	.80	...

Haynesville

33 gravity and above	1.25	...
Below 33 gravity	1.15	...

Bull Bayou

38 gravity and above	1.30	1.35
35 gravity and 37.9	1.15	1.25
32 to 34.9 gravity	1.00	1.20
De Soto crude	1.35	1.45
Crichton	1.15	1.10
Bellevue	1.25	.85
Jennings	1.35	1.25
Vinton	1.35	1.25
Edgerly crude	1.35	1.25

Smackover

	Texas Co.	Standard of La.
26 gravity and above	.95	.95
25 to 25.9 gravity	.80	.80
24 to 24.9 gravity	.70	.70
Below 24.0 gravity	.60	.60

El Dorado

33 gravity and above	1.35	...
Below 33 gravity	1.25	...
East Field (Calion)	.60	...

Stephens District

(Posted by Atlantic Oil Producing Company)

28 gravity and above 60 degrees	1.00	...
26 to 27.9 gravity at 60 degrees	.95	...
23 to 25.9 gravity at 60 degrees	.80	...
Below 23 gravity at 60 degrees	.60	...

WYOMING--MONTANA

Wyoming

Elk Basin	1.45	1.70
Grass Creek	1.45	1.70
Rock Creek	1.20	1.35
Lance Creek	1.40	1.70
Mule Creek	.60	.95
Big Muddy	1.00	1.25
Salt Creek	1.10	1.35
Osage	1.40	1.80
Hamilton Dome	1.10	1.35
Pilot Butte	.75	1.10
Lander	.45	1.00
Torchlight-Greybull	1.40	1.80

Montana

Sunburst	.90	.80
Cat Creek	1.45	1.85

CANADIAN CRUDE

Oil Springs	2.55	2.45
Petrolia	2.48	2.38

*Plus 2½ cents bounty.

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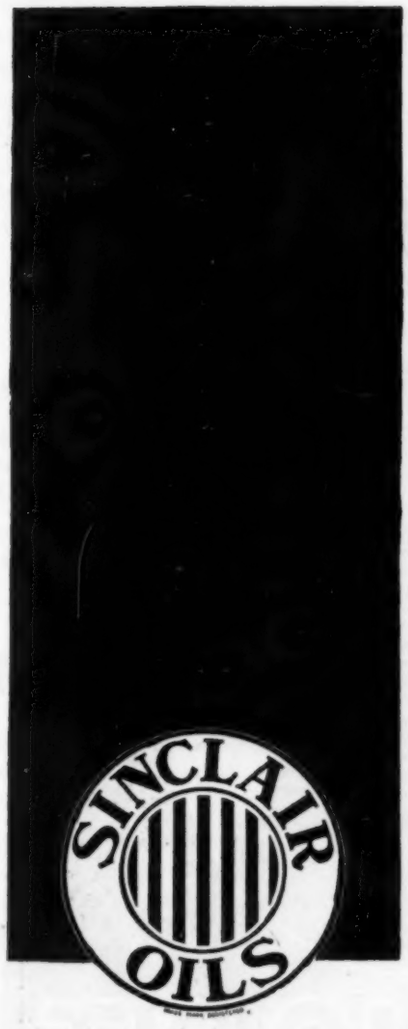

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Oklahoma to Reach 600,000 Barrels

(Continued from page 30)

pool is on the decline, being lower than 60,000 barrels daily, which it passed in August. But the wells now going down in the proven north area are sure to bring the output back higher than its old level.

The drilling revival at Cromwell is due to the strike of the Central National Oil Company No. 1 Dunn, in the center of the southwest of the southeast of the southeast of section 4-10-8. Completed in sand from 3358 to 3380 feet for 45 barrels an hour, it extended the field a mile to the north. Since then the well has been deepened seven feet and its output has been as high as 120 barrels an hour.

Between this well and that of the Sinclair-Transcontinental companies in the southeast corner of the southwest of the southwest of section 9-10-8, there are more than 50 wells drilling, with 31 rigs and locations.

Until the completion of some of these wells, Cromwell output may be on the decline. But with the flush of these wells a new high mark seems certain to follow. Those calculating Oklahoma production for the remainder of the year are crediting Cromwell with a peak production of 100,000 barrels.

Presence of water in the south part of the field is given little consideration other than the fact that it marks the limit to that direction, as well as gives producers an indication of what may follow if caution is not taken in handling properties. While the field is defined to the south and to the flanks at either side of the south limit, its lines north, east and west are yet to be determined.

A survey of both fields August 30 showed the following condition of wells.

	Drilling wells	Shut down	Rigs	Locations
Cromwell	67	9	46	10
Tonkawa (deep sand)	45	none	6	2

In the case of Tonkawa it seems certain that the drilling report shortly will show more than 100 wells. Despite the prolific yield of the Wilcox sand, lease owners have been cautious in drilling. The wells now going down have been located with the view of determining the extent of the structure in the lower sand. When the extent of the structure has been established, locations are sure to follow.

There is no evidence of curtailment at either Tonkawa or Cromwell, although it is evident that lease owners are drilling cautiously and wisely, as neither pool is in what can be termed a wild crush of drilling.

Taking the whole state, a compilation of field activity shows a decline between July 31 and August 31. The survey follows:

	Drilling Wells	Wells Shutdown	Rigs	Locations	Total
July 31	875	298	180	66	1,419
Aug. 31	728	312	192	87	1,319

While these figures show a drop in drilling wells, it is somewhat offset by larger figures for both rigs and locations for August over July. The jump in rig and location totals is due to the activity of Tonkawa and Cromwell. A drop in drilling wells is typical of a period of declining prices. That it will in time be reflected in a declining well output is certain.

But for the present the promise of high flush production from the Tonkawa deep sand and from Cromwell is such that Oklahoma production is sure to climb, were drilling over the next two months restricted to these two fields. And no decline in Oklahoma production can be expected until after Tonkawa and Cromwell have passed their coming flush days.

Speculation on the market effect of this drilling leads to varied conclusions. Oklahoma producers are looking for each day to bring a crude price cut. That it has not come has been surprising. If the daily production goes to 600,000, producers feel certain they will see the leanest days they have known in three years.

One fact makes itself prominent in the drilling now underway in Oklahoma. Each well completed will in time add its quota to the settled production of the State. The bulk of Oklahoma wells is now coming from wells producing less than 50 barrels daily. Each completion of the present means a recruit for the army of settled producers of the future.

This is another of the factors pointing to a mounting Oklahoma production over the remainder of the year.

Columbus, Ohio, Aug. 25.—The Pure Oil Company has acquired from The Texas Company its oil terminal at Pensacola, Florida, which has not been utilized to capacity.

Why Stretch Your Neck?

Men who are working on a short masted pulling machine, and forced to keep one eye below and the other trained on the crown pulley to keep the tubing hook clear, are at a disadvantage. They are fearful of their own safety and cannot give the job the speed and careful consideration it merits if the cause were removed.

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Say you saw it in The Oil Weekly

Field Boilers Deserve Close Attention

Most important item of operating equipment. Some sidelights on construction and maintenance

By Harry Pennington,
Mechanical Engineer

THE design, materials and manufacture of boilers are covered in detail by the boiler code of the American Society of Mechanical Engineers, and by insurance requirements, and when boilers are so made, with experience in building this type of boiler as a guide, safety and economy as good as obtainable in fire tube boilers under present day steam generating practice may be secured with skillful use.

The fixed parts of the boiler, such as the furnace dimensions, thickness of tubes and sheets, location and dimensions of stay bolts, that are permanent when the boiler leaves the manufacturer's shops, and are not subject to change in the field, are considered in this article together with the field use of the boiler, with no attempt being made to write a treatise on boiler construction.

Boilers are not held to rigid design by the code, nor are non-code boilers held rigidly to design by insurance requirements, therefore some discussion would be proper, covering the compromises that must be made to build a commercial boiler.

The oil field boiler is a great steamer; it develops large overload capacities continuously and exceeds the fire tube stationary boiler in steaming capacity per square foot of heating surface. Its capacity for sudden loads is also one of its attributes.

Boiler Horepower

The term boiler horsepower is nominal; boilers deliver no horsepower, but generate steam from which we can obtain horsepower by using such steam in an engine. But the term is firmly fixed, nevertheless, and today's boiler practice defines one boiler horsepower as the capacity to evaporate 30 pounds of water from a feed temperature of 100 F. into steam at 70 pounds gauge, the equivalent of which is 34½ pounds of water into steam from and at 212 F. For simplicity, the former will be used, and factors of evaporation will be omitted to avoid complications.

An engine horsepower is quite another thing, it being the duty of lifting 33,000 pounds one foot in one minute, therefore, engine or brake horsepower has no relation to boiler horsepower. One engine may develop power with a steam consumption of 50 pounds per horsepower hour, while another may require only 25 pounds; then, 1,000 pounds of steam per hour will develop 20 horsepower in the first engine while in the second engine, 40 horsepower results.

But boilers, further, are not rated according to their steaming capacity; heating surface is the basis of commercial rating. Some manufacturers rate boilers at 12 square feet per boiler horsepower, some use 10 and some 8.

If 10 square feet is the rating basis, then each square foot is assigned a duty for rating purposes, of evaporating 3 pounds per hour. This again is nominal; the evaporative rates of boilers vary widely from this figure. The oil country boiler can evaporate the equivalent of 8 pounds of water per square foot per hour, continuously, or at more than 250% load. The oil country boiler, with 540 square feet of heating surface then, can evaporate 4,320 pounds of steam per hour, which is the equivalent of 144 boiler horsepower and, when there are two forty-fives on a medium depth well, or three on a deep well, we have a steam plant of considerable capacity.

That power costs for operating purposes, always an item of great expense to the producer, can be materially reduced is clearly shown by an investigation into present day boiler practice. Methods of construction and maintenance play an important part in this operating charge and should be given careful consideration by field men.

Mr. Pennington, the author of the accompanying article, has had considerable experience in this line of research, and writes his findings from the field man's standpoint.—The Editor.

The foregoing firing rate, though, is not as high as in locomotive practice, where the steam generated per square foot of heating surface may run from 15 to 18 pounds, due to large furnace volume and forced draft obtained from the exhaust nozzle. It is becoming general practice also to set water tube boilers high, securing large furnaces, and to fire them at rates from 150% to 200% without much loss in efficiency.

When lifting drill pipe, as in rotary work, we will assume that the well is of such depth and the lifting speed such that 75 actual foot pounds horsepower is required. If the drilling engine uses 35 pounds of steam per indicated horsepower hour, and we allow 66 2/3% engine and draw works efficiency, the engine is required to develop 112½ indicated horsepower, and for this requires steam at the rate of 3,937 pounds per hour, which equals 131 boiler horsepower. Any forty-five of fair design will do this, as a matter of fact, it does more for a few minutes. The twin drilling engine develops more horsepower than the single engine, making two boilers necessary.

The 10"x6"x12" drilling pump, delivering 200 gallons per minute at 100 pounds pressure, develops about 15 indicated horsepower in the cylinders or 10 actual horsepower of the water end, and the steam consumption of these being from 140 to 170 pounds per indicated horsepower hour, say 150, 2,250 pounds of steam per hour is required, which, at the rate of 30 pounds, calls for 75 boiler horsepower to be developed to operate such pump. Then, when spudding in gumbo, the steam consumption may require the boilers to operate at more than 200 horsepower.

We can see that the oil country boiler is seldom operated at the capacity used for rating purposes, but that the load averages much greater.

High pressure, dry steam from drilling boilers makes the rig performance brisk and speedier and the tendency is toward higher pressures than 100 pounds at the boiler. The same tendency is evident in other steam practice; the general steam pressure in naval work is 300 pounds, with 400 being considered. The writer used drilling boilers 12 years ago that were built for 175 pounds working pressure, and there are many advantages of high pressure as to rig capacity, speed, weight of rig parts and the like, that overweigh the disadvantages of additional weight and maintenance.

But to make a 150-pound working pressure boiler with 550 square feet of heating surface—call it a 45 if you wish—the weight must be around 13,000 pounds for the bare code boiler. Highway laws of late have limited the weight transported over surfaced roads at 10,000 pounds, though, and boilers of this weight are moved with difficulty.

The non-code boiler for 150 pounds pressure is considerably lighter, as may be observed upon examination side by side or by weighing, but the code boiler may be seen to have a great many superior points, even to the most casual inspector.

Boiler Requirements

The primary requirements of a boiler are: Reliability—mechanical maintenance—that is freedom from broken staybolts, cracked sheets, leaky flues and seams; continuous development of maximum horsepower; dry steam; efficiency as close as possible to best stationary boilers. Insofar as the boiler design can contribute, circulation is the main factor, but skillful firing and boiler care can contribute much, and we must consider this feature also when comparing boilers.

That the subject of boilers—design and arrangement for firing and care, is worthy of attention may be estimated from the following: The writer had seven boilers on one lease, all drilling with rotary rigs. These were of three different makes, consequently of three different designs, but all of them were supplied with the same grade of feed water from the same source and the quality was good.

One boiler design, somewhat similar to that shown in Fjgure No. 1, would furnish ample steam for a Louisiana Model Rotary Drilling Rig, with 12"x12" drilling engine and 10"x5¾"x12" drilling pumps. The boiler fire box was wide, long and deep, permitting easy firing, with a large flame, without impinging the tubes or sheets heavily at any time, and the heaviest load did

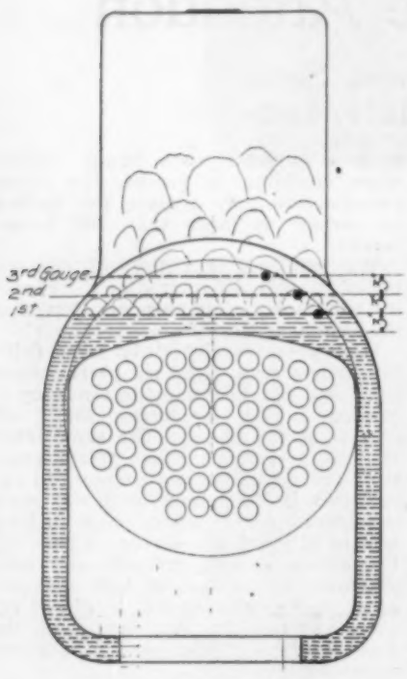

Figure 1

not carry flame into the tubes. This boiler would run 18 hours per day and consume 16 barrels of 24-26 Be. fuel oil per day, and during winter, delivered ample steam that did not interfere with the lubrication of engine and pumps; in fact, there was very little difference noticeable in this boiler whether the weather was cold or not. The total heating surface was 610 square feet and one test showed a boiler efficiency of 65.6% at 145% load. This boiler also required less water than the two yet to be described. Another boiler design had the crown sheet placed high, or rather, lacked sufficient wagon top and barrel elevation above the crown sheet. This type boiler primed badly and the fuel consumption was from 40 to 45 barrels per day. The heating surface was 596 square feet.

Still another type with 585 square feet of heating surface, with a firebox arrangement somewhat like the second boiler, had the barrel and tubes two feet shorter than usual, and while this cut off some of the least effective heating surafce, the length was not sufficient to cool the stack gases below 750 F. when firing in ordinary drilling; with the bit in gumbo, the stack always reddened when firing heavily.

The drilling equipment was the same, but the latter two boilers were such that eventually two were required to run a rig, both for capacity and economy, while the first boiler continued to perform. One large boiler is more economical than two smaller ones equalling in capacity the larger one; but where well safety demands a continuous source of steam for power, a division into two boilers is necessary, although the economy is not as great as with one.

When oil is burned, it must first be vaporized, then ignited. The temperature at which these vapors ignite ranges between 700 and 900 degrees F., and if the furnace temperature was always above ignition temperature, there would be no unburned gases going out of the stack. But the furnace is surrounded by relatively cold surfaces; the sheets and tubes of a boiler steaming at 150 pounds pressure are at the temperature corresponding to the pressure, or at 150 pounds gauge, 366 degrees F. while the flame temperature ranges from 2,500 to 3,200 F. And, when the hot flame strikes the relatively cold sheets and tubes, the flame is chilled, reducing its temperature below ignition temperature, consequently, there is no further combustion and the vapors not consumed up to that time pass on out of the stack without full benefit. And, when the hot flame strikes fire sheets and tubes, there is danger of burning and thinning them, and of burning off the tube bead.

Boilers can be forced with a blower up the stack, but excess draft can reduce capacity; the writer has seen boilers run continually with the stack red hot and flame coming out at the top, draft being forced with a 1" steam line. In the first place, the stack draft blower can consume as much as 25% of the steam generated; in the second place, the desired point of combustion is in the furnace and not in the smoke box and stack, and when the flame is pulled through in such quantity that the tubes chill it, allowing it to pass through into the smoke box where it is re-ignited, it burns there and on up the stack, without any benefit and still the boiler is not delivering as much steam to the steam line as it could if it were fired properly and easily.

For maintaining ignition temperature, the flame should be surrounded with a hot refractory, unless there is sufficient volume to ignite all of the oil vapors and burn them without contacting a sheet or tube. The target, of fire brick is beneficial for maintaining ignition temperature, and even further than that, the undershot arrangement of firing, as shown in Figure No. 2, affords a greater furnace volume for more complete combustion before the flame strikes a sheet, when the boiler is forced.

The ideal of furnace temperatures is that in which there are no cold spots in the corners, so that the temperatures over the entire furnace are the same and are hot. But the corners are likely to have cold spots if the fuel is not fired evenly and given a supply of air uniformly around the flame.

The regulation of quantity air supply for even control of combustion rates of fuel should be solely in the stack, by means of the damper, but the admission of air to the furnace should be such that air is admitted evenly, causing the flame to have no long points projecting into the tubes. This can be secured only by careful observation of the performance of varjous burners, arrangements of the same, and of brick checker work in the furnace and air admission. An excess of air underneath the burner will cause a flame point to rise into the tubes at the top of the flue sheet; an excess of air at the top of the burner and flame will cause the sides of the flame to strike the furnace side sheets. An excess of air is necessary, however, but this excess should be distributed to the flame in such way as to secure a clear white flame that does not project in long points, but burns evenly and smoothly, when the maximum steaming rates and fuel economy may be obtained.

Too much air is as bad as too little because it prevents burning oil vapors,

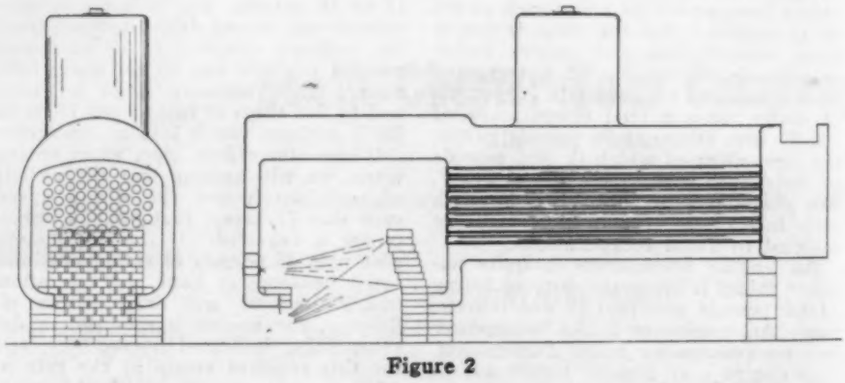

Figure 2

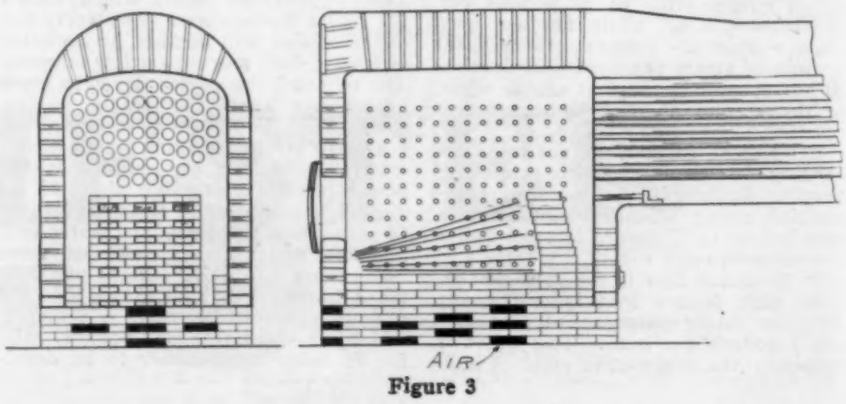

Figure 3

Moore Derrick Defies Lightning and Fire

while floor, walk, sills and all other wood parts burn up

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DURING a storm north of Horning, Oklahoma, lightning struck the drilling cables on a derrick belonging to the Superior Oil Corporation. It parted the cable near the ground, causing a string of 10-inch tools to drop over 1,500 feet to the bottom.

The well was making two million feet of gas which caught fire and burnt violently for five hours before successfully put out. All wood parts were quickly destroyed, including floor, walk, frame and main sill, siding, bandwheel and posts.

The steel derrick remained standing, practically unhurt. Other steel equipment such as Moore Steel Bull and Calf Wheels were also intact and in good working order, except for the wood brake cants which were completely consumed.

The photograph shows the derrick and rig after the fire, just as the rig builders were getting ready to replace the timbers and other burned woodwork. The Moore steel derrick itself, resting on concrete corners, needed no repairs.

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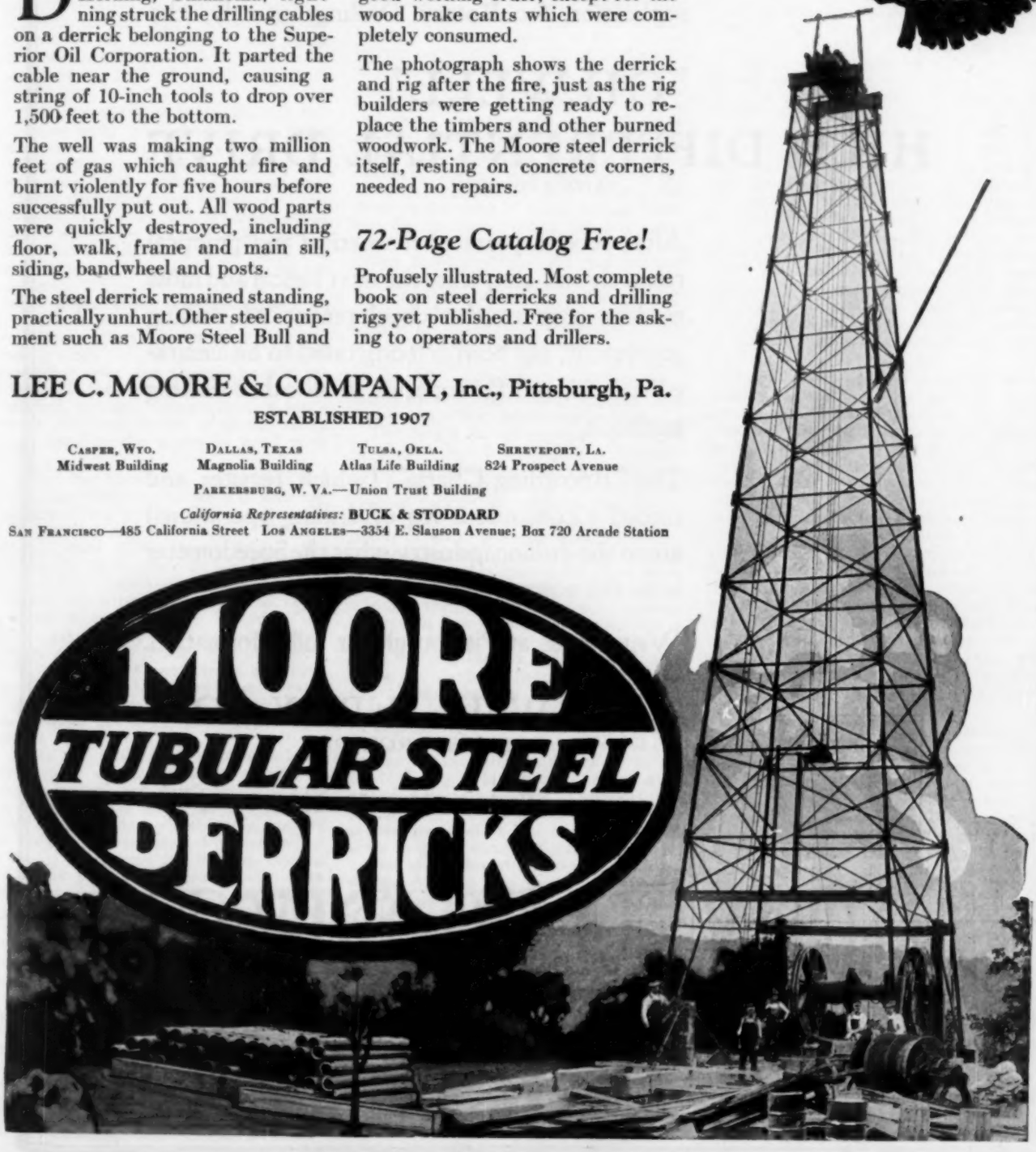

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cools the furnace, and prevents maintenance of the high ignition temperatures necessary for complete combustion.

As shown in Fig. 3 the mud ring as usually built into the boiler, has been extended downward, instead of inward, making the furnace correspondingly deeper. And the air is admitted underneath, on the sides and in front through a register in the furnace door, permitting regulation of the amount of air to the burner, and proportioning to the points necessary to secure an even flame within the furnace, but using the damper as a means of controlling the amount admitted. The amount of air required may be roughly proportioned by assuming that the air space between the brick checker work is made 8¼"x2" when each of such spaces will admit sufficient air for four developed boiler horsepower, with the ordinary stack height used in the field.

This arrangement increases the furnace volume, and permits of firing more easily; the furnace volume of the average field boiler is smaller in proportion to heating surface anyway than obtains in stationary practice. The furnace of Figure No. 3 corresponds somewhat to the arrangement used in locomotive boilers oil fired in which high steaming rates and efficiencies are obtained.

The smoke stack need not be so high for fuel oil as for coal or wood. Coal on a grate offers resistance to air passing through the fuel bed and reduces the air supply, but the oil burner assists draft and there being no retarding fuel bed, the same dimensions of stack in an oil fired boiler produces more draft than if the boiler is fired with coal.

When the furnace is set so that the prevailing direction of wind is into the furnace, there will be less interference with draft from this cause. When a strong wind blows from behind the boiler, the flame may be blown out of the furnace or sucked out by wind passing the sides, making firing and keeping up steam difficult. Housing the boiler prevents this. A portable boiler house, of metal, similar to other portable houses, is of much value in taking care of boilers, to secure good steaming and economy, anyway, although these have not made their appearance as yet in the field.

Since the boiler has a variable load, the supply of air must necessarily be under control and this control should be in the stack, never in the furnace openings, so that a close fitting damper is always a necessity. Further, when a boiler is cut out for a time, cutting off draft prevents it from cooling so quickly, and avoids setting up strains in sheets, tubes and staybolts that cause leaks. The stack may be dented or bent in moving and the practice of riveting rings around it at intervals is one that is good.

Just what goes on inside of a boiler cannot be seen from the outside, but if it could be at all times, we could secure very much better performances and could take care of them better. A test boiler, fitted with glass covered peep holes, under study by the writer some years ago, disclosed many points about steaming. Steam without moisture is invisible and the water surface therefore could be plainly seen. Steam is liberated from the water surface in little waterspouts, emitting jets of steam. When the boiler is forced so much that these little jets crowd one another, steam picks up moisture, carrying it out of the boiler, making wet steam. The surface from which steam disengages or is liberated is a measure of steaming capacity also, then, because if this surface is too small for the steam generated, priming results.

In Figure No. 1, [1]the boiler has a wagon top ending above the front flue sheet and the lowermost gauge cock is three inches above the crown sheet; when water is at this gauge, the liberating surface of this 576 square foot heating surface boiler, is 53.6 square feet; with water level at the second gauge cock, the liberating surface is 45.8 square feet, while with three gauges of water, the liberating surface is 34.7 square feet. With water above the third gauge cock, there is practically no liberating surface left in the barrel, although this boiler is a most excellent design. And, with boilers not so well designed in this respect, the third gauge level of water causes priming, due to restriction of liberating surface. Liberating surface, as seen, reduces more between the second and third gauges than the first and second, due to sheet curvature and the running level of the boiler is therefore held as nearly as possible so that water and steam both will come from the second gauge, which maintains six inches of water over the crown sheet, still leaving sufficient liberating surface and steam space for rather heavy loads.

The height of crown sheet as shown in Figure No. 1 is largely a compromise to maintain as low water level in the barrel as possible for securing liberating surface as outlined, and at the same time to maintain an adequate depth of water over the crown sheet.

The sheet with somewhat of an arch as shown is safer than a flat sheet from burning, although the flat sheet permits a longer thread on the staybolt. Should water run low over a flat sheet that is not kept level, the sheet may burn at a high corner, that is, become red and allow the staybolts to pull out and drop the sheet, whereas, the arched sheet with the fusible plugs at the top would be exposed to flame without water first along the center line at the top and not at any other point where there is no fusible plug. The arched sheet also affords a certain amount of support due to the arch itself and the slope of the arched sheet offers less opportunity for scale to lodge than the flat sheet does.

The arch, though, raises the top of the sheet about four inches, raising the water level a corresponding amount, reducing the liberating surface and steam space somewhat, but the additional safety secured is worth a small sacrifice of capacity, which is one of the necessary compromises in boiler design.

The cause of boiler failures in the field lays mainly between low water and corrosion. There is no design of firebox boiler that will prevent dropping the crown sheet if it becomes red hot, allowing the staybolts to pull out.

It would seem that fusible plugs would prevent dropping crown sheets or burning them, but for various reasons, sheets are occasionally dropped with serious or fatal results to the fireman. When the fusible plug melts without blowing, as they can do, the furnace end may fill up with soot or carbon and the sheet may come down before that plug will blow.

Boilers are not level always; they may be set level but may sink at one end or the other due to ground softening from wash water. This makes two fusible plugs necessary, one toward each end of the crown sheet, so that whether one end is higher or the other, a plug is exposed immediately water is below one or the other.

The inspection of plugs is necessary for safety. The furnace end of the plug should be scraped bright to see that the end is in good shape and not fused and the other end must be freed of scale. Plugs may be filled by the manufacturer only with pure tin, to comply with the code. Refilling with other soft metals is dangerous in the extreme because tin melts at 449 degrees F. while lead melts at 621 F., zinc at 786 F. and antimony at 1166 F. and these melting points are entirely too high for fusing before the sheet is hot, while tin fuses readily and is safe for these plugs. Bearing metals, ordinary babbitt, are very useful metals when used in bearings, but their high melting point makes them very dangerous when used for refilling plugs, and the code and laws are very strict in this. Plugs must be renewed once yearly.

Many boilers are not equipped with gauge glasses on the ground that glasses are liable to mislead the fireman by clogging up, while the gauge cock always shows the level at the cock. While the gauge cock shows water, still it is subject to errors also, especially when the boiler is priming, and the cock is not a perfect device either. The only safe water level indicating appliance is the gauge column, Fig. 5, with glass and cocks in it; it is the best appliance ever put on a boiler because water in it is not disturbed as much as water in the boiler and the level is indicated more surely and accurately. It may be removed when moving the boiler, just as the gauge cocks are and is not any more trouble to maintain.

The location of feedwater inlet necessarily must be at the coldest point of the boiler, which is at the rear end of the barrel, but away from a seam, though. Admission of cold water to the mud ring, through the throat sheet, which is prevalent to some extent, sets up sheet and stay bolt stresses in this locality, and particularly in the fire box sheet just in front of the inlet. Upon changing this place of inlet to the barrel, the writer has eliminated leaky seams in the mud rim, leaky flues and stays. In addition, scale is precipitated around the feedwater inlet, as well as dissolved gases from the water being released, both of which corrode the fire and throat sheets, thinning them unduly. The collection of scale in the mud ring in quantity is not safe, either, because the fire will burn the sheet next to them, but the barrel is not exposed to flame and, although scale may be precipitated around and below the inlet into the barrel, no sheet or stay-

(Continued on page 44.)

[1]Courtesy J. S. Schofield & Sons.

LUMNITE

This CONCRETE PIPE

made with Lumnite Cement was subjected at twenty-four hours to the test ordinary concrete pipe must stand at twenty-eight days. The specifications required that no crack appear in twenty-eight-day-old pipe under a load of less than 19,200 pounds. This Lumnite concrete pipe, only one day old, showed no crack until the load reached 24,710 pounds.

ATLAS Lumnite Cement is a hydraulic cement which develops at twenty-four hours greater strength than that developed by ordinary cements at twenty-eight days. This means twenty-eight-day concrete in twenty-four hours. This high early strength is attained by Lumnite Cement through its principal ingredient, obtained from high-grade aluminum ore (Bauxite).

Lumnite is adapted to the various uses of concrete and is mixed and manipulated in the same manner as Portland Cement. An additional advantage of Lumnite is that it can be used in much colder weather than can other cements.

LUMNITE STRENGTH

Compressive tests by the Robert W. Hunt Company.

	1 LUMNITE 3 STANDARD OTTAWA SAND	1 LUMNITE 2 SAND 4 PEBBLES	1 LUMNITE 3 SAND 6 PEBBLES
1 Day	4789	3441	2071
2 Days	4906	3818	2444
3 Days	4940	4127	2598
7 Days	4985	4391	2663
28 Days	5005	4462	2691

(Each value represents average strength in compression of 3 specimens in lbs. per sq. in.)

CEMENT

saves 27 days

LUMNITE Cement makes twenty-eight-day concrete in twenty-four hours without the use of artificial accelerators. Lumnite effects big savings in the oil fields where early use of cement or concrete may be vital. For cementing oil well casings, for checking the flow of upper and lower waters, the high early strength of concrete is vital and may be the means of preventing failures in operations. For new concrete construction or emergency repair work where time saving is a factor Lumnite will prove economical.

Lumnite Cement is *not* "quick setting," but allows the normal time required for mixing and pouring in the casings. Its high early strength develops with great rapidity after the initial set has been attained.

While Lumnite is a new product in America, cements similar to Lumnite have been used successfully in Europe for more than ten years wherever in concrete construction there is required high early strength, or resistance to the chemical action of sea water or sulphate-bearing ground water.

A sample will gladly be furnished for testing purposes or for any small trial use

Send this coupon TO DAY

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THE ATLAS LUMNITE CEMENT CO.

25 *Broadway,* NEW YORK CITY

Field Boilers Deserve Close Attention

(Continued from page 41.)

bolt rupture results from this cause and the scale may be washed forward to the mud ring and out of the handholes.

The pump and injectors should not be so large as to deliver so much water that they cannot be run continuously, else the boiler receives intermittent shots of cold water. Feedwater appliances should be of such size that a constant stream of water, corresponding to load, may be pumped in to keep the water level at or about the second gauge, and the boiler performs immeasurably better. Large charges of feedwater make the boiler prime and foam, reduces boiler pressure by cooling, sets up internal stresses in sheets and stays, and may even crack a fire sheet. Of course, the load on drilling boilers is variable and the supply of feedwater must be variable but the water level and steam pressure should not lag behind the load appreciably; the skillful fireman can anticipate load requirements and set the burners and feed pump to an increased or reduced load without waiting for steam pressure and water level to make him do so, which maintains the quality of steam constant and makes the rig run better. By way of note, cold water not only stresses staybolts lengthwise, but contraction of sheets and expansion, bends the stay bolts, and may crack them. In marine work, water colder than 100 degrees F. is prohibited by law from being pumped into boilers.

Boiler scale forming solids are of two general kinds; soft scale, which is made up of the carbonates of lime and magnesia, and hard scale, consisting of sulphates. And incrustation may be also from mud, soluble salts and organic matter. Corrosion is usually from animal fats and other organic matter, as from water from a river into which sewage is delivered, and from magnesium chloride or sulphate, sugar, acids and either carbon dioxide or oxygen in solution. Scale forming solids may be tested by using soap—the soap test. If water curdles, instead of making a lather, with ordinary soap, it is too hard for boiler use and, if another supply is not available, some treatment under the direction of competent boiler feed water chemical specialists can remove such scale.

River water, or water from reservoirs is muddy after a rain, and should it be muddy when delivered to the rig, the rig should have a settling tank to clear the water before use. In any event, the rig water tank should have the water outlet located at least twelve inches above the bottom so that the usual tank sediment is not pumped into the boiler.

Lumps of hard substances around the outside of handholes indicates sufficient concentration of corrosive salts within the boiler to cause alarm. There is no remedy for salt in boiler feed water, that will remove salt from the water chemically on a commercial basis. Salt can be removed from water only by evaporating and leaving the salt behind. Concentration of salt within the boiler sets up priming troubles and, should the salt content be initially so high that priming results, the only remedy is to secure a better supply of water.

Boiler compounds for removing scale are almost always based upon soda with other substances rich in tannin. The soda compounds act by combining with the soluble scale forming solids to make them insoluble or, in other words to precipitate them, when they sink. The tannic acid compounds, used in connection with soda, act by penetrating to the boiler steel, which breaks up scale by decomposition, when the scale is loosened. Compounds should be used only in clean boilers, though. On the basis that it is better to prevent scale than to allow it to form, and large quantities of scale forming in the boiler sets up danger, water should be treated before being placed into the boiler and preferably at the pump station where it may be done continually and with profit, making the water more suitable for boilers as well as for gas engine jackets.

Crude oil used in a boiler will make a tough gummy scale and on a tube of fire sheet will cause a bag to form and burn the metal.

The small, open feedwater heater has not yet made its appearance in the field; beyond question, such an auxiliary would be of much value, when hard water must be used, particularly, because it would give the boiler more capacity, by 10 per cent to 20 per cent; prevent wet steam to a large extent, where the salt content of the water is not large; reduce fuel consumption from 10 per cent to 15 per cent; remove much internal stress due to cold water cooling, and take most of the soft scale and mud and some of the hard scale out of the water before it goes into the boiler. We have always thought of the field boiler as a small unit, but today, the two or three field boilers used on deep wells constitute a boiler station developing at times from 200 to 300 horsepower, and heating of feedwater for this size of station has shown the undoubted benefit in many ways besides fuel consumption.

Boilers may be freed of scale by boiling about twenty pounds of soda ash within the boiler with no steam pressure for 24 hours, then using some kind of vibrating hammer that dislodges scale from the tube which is effective when scale is previously loosened. See Fig. 4. When scale is completely removed thus, from around the tube ends and staybolts, they may leak and require rolling and re-riveting, but this nevertheless should be done and the boiler kept free of scale, because a boiler that requires scale to keep it from leaking is not in condition for efficient, economical work and neither can it be called safe.

To be concluded in next issue

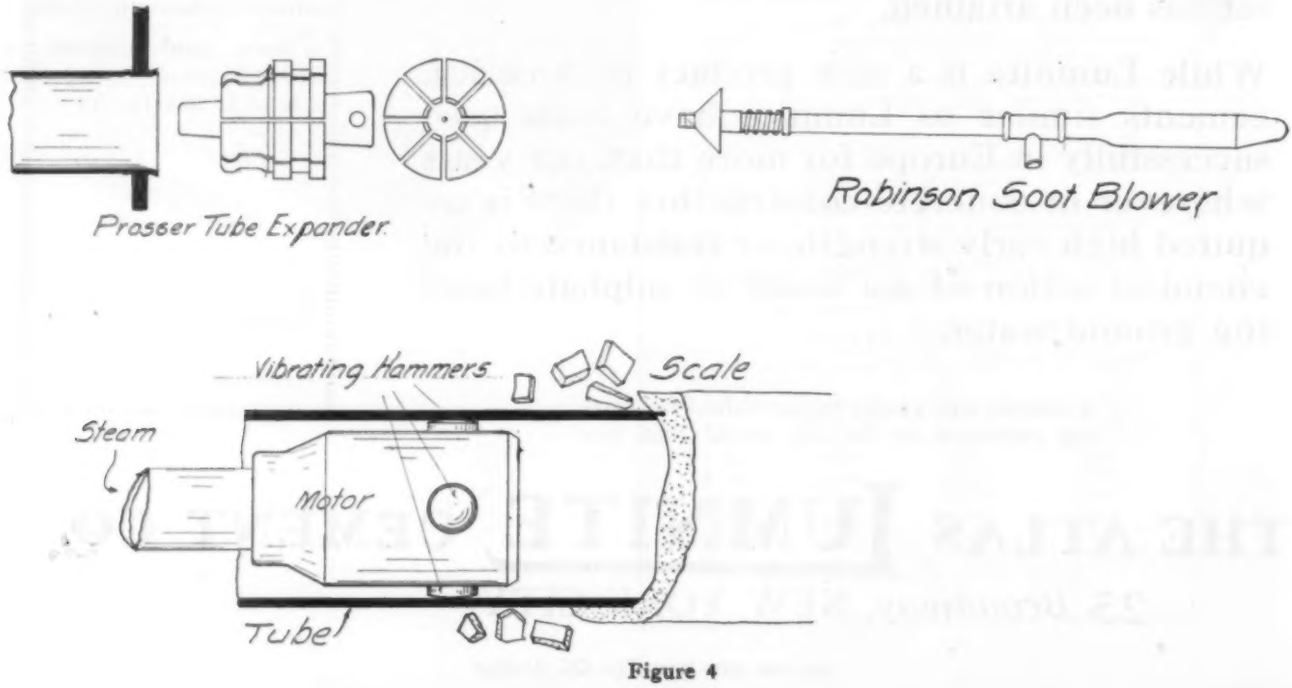
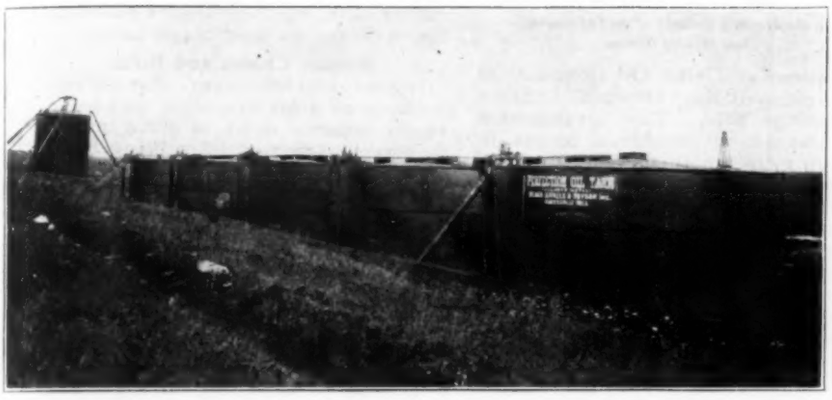


Figure 4

PERFECTION VAPOR PRESSURE TANKS
WOOD, AND BOLTED STEEL TANKS



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The Costly Lesson of Experience

THE average oil producer's experience with evaporation has been a costly one. He has literally seen his legitimate profits go up into thin air.

And as a result of this experience, he has found it does not pay to use ordinary tanks as lease equipment. He now knows that the sun will begin to rob him immediately of quantity and quality if he does.

That's why you will find Perfection Vapor Pressure tanks on every hand in every active field in the country. Producers know that the Perfection is the one tank that is built "right," that it is practically the only tank on the market that is braced inside with struts and angle irons, that it is made of the best rust-resisting steel obtainable, that it has a fool-proof relief valve to take care of both pressure and vacuum and last, but not least, it is backed by an organization whose history dates back longer than the average generation.

You also should learn the lesson that is being taught all over the country. Begin at once to standardize on Perfection tanks—the tanks that actually pay for themselves in a short time. Get in touch with us direct or call up our branch representative in your field. It will entail no obligation on your part.

Remember that on installation, Perfection Vapor Pressure Tanks will begin at once to pay you daily dividends.

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Handling High Pressure in Deep Fields

Each well in prolific California pools demand special attention. How some producers were controlled

By A. J. Mason
In the Monthly Bulletin of the California State Mining Bureau

THE successful development of the Long Beach and Santa Fe Springs oil fields in the Los Angeles Basin, where wells produced large volumes of oil under high pressure from the prolific sands of the deep oil zones, was attended by many mechanical problems dealing with the efficient control of the flow of the wells.

These problems had to be met and solved. Fittings had to be obtained and used that would be strong enough to stand the great strains to which they would be subjected. These parts had to be assembled and so arranged as to meet any emergency which might come up. In each individual well the designing of flow nipples or "beans",[1] and the determination of the best size to use which would permit of the maximum production of oil and yet retain sufficient pressure against the formations back of the oil string to prevent the sand from entering and plugging the hole, were matters of great importance. It required men with experience and mechanical ingenuity to meet the demands of the moment.

Equipment Makes Work Possible

This work of arranging the fittings for controlling high-pressure wells is often spoken of, using oil field language, as "harnessing the well"—and the assembly of parts, in place, is termed the "Christmas tree".

The designing and manufacture of heavier and better drilling equipment has made possible the development of the deeper-lying oil-bearing formations. The fluid confined in the sand beds at these greater depths is often under extremely high pressure, ranging in the Santa Fe Springs field from 800 pounds per square inch to as much as 2000 pounds per square inch. Effective control devices for handling the oil under such pressures is imperative. If the flow of oil is accompanied by sand the effectiveness of the controlling device is endangered, due to the abrasive action of the sand. To lose control of a well flowing under high pressure generally means the loss of many dollars to the operator, and endangers the natural deposits in the oil field.

It is the intention of the writer to discuss some of the more important features of oil well control in this paper and to present sketches showing the different methods of arranging the connections at the surface. These sketches may, perhaps, be considered typical of all the various methods in use. The types have been selected, not for any special merit claimed for them, but rather to depict a variety of features. There is no standard design for connections, each company finding its particular method satisfactory to itself.

Union Scheme

Plate I shows the arrangement of the connections at Union Oil Company of California well No. "Howard" 5, Santa Fe Springs field. This arrangement was planned to provide a means of producing from both the oil string and the tubing, simultaneously, with the object of securing the maximum production. However, as the tubing was not put in the well, the scheme was not carried out.

It should be noted that the 6¼-inch casing is swedged out to 8¼ inches, just above the "Midway" head, in order to give a larger and better support for the connection above.

New Patent Feature

Plate II shows the arrangement of the connections at Associated Oil Company well No. "Fulton" 2, Santa Fe Springs field. A new patented device for changing the size of the bean without disconnecting a union is in use at this well. The 6¼-inch casing is here shown packed off from the 8¼-inch casing by means of the well-known Taylor-Liady packing spider, which contains slips to grip the 6¼-inch casing, using no bolts whatever.

Plate III shows the connections as placed at Buckeye Union Oil Company well No. 2, Santa Fe Springs field. Here another unique patented device for changing the bean is used. An uncommon feature in the arrangement of the connections at this well is the flow lines turning and extending vertically downward beneath the derrick floor and thence out horizontally. This arrangement permits of easily housing all flow lines above the derrick floor, and beyond the derrick all lines are either on the ground or buried and therefore not so exposed to accidents.

Plate IV illustrates a connection using a minimum number of fittings and a compact control head in use at Shell Company of California well No. "GHN" 8, Santa Fe Springs field. The neat appearance of the whole arrangement was emphasized by contrast, all the pipe being painted black and all valves painted red.

Use Two Flow Lines

At least two flow lines leading from a high pressure well are necessary to insure safety to the control of the well. If the production is to come through tubing and from between the tubing and the oil string, then four flow lines are connected up. In other words, two flow lines are used for every string of pipe through which production is taken from a well. Only one flow line from each of such strings of pipe is used at a time. This permits making any repairs or changes that are necessary on the idle flow line.

To change from one flow line to the other, the gate or valve on the flow line being put into service is opened, and then the gate or valve on the other flow line is closed. The flow from the well is, therefore, not interrupted and there is no necessity for touching the master gate, which is always placed on the well for emergency purposes.

Anchor Chains and Bolts

It is of great importance that the connections on a high-pressure well be securely fastened down in some manner to prevent any part from being blown off and permitting the well to flow out of control.

As shown in the drawings, anchor chains or bolts extend from the uppermost connection down on either side and are fastened to the casing. These anchor lines aid the threaded connections in holding the parts together, which might otherwise be forced apart by the internal pressure on the lines.

Instead of anchoring to the casing, many times one-inch cables are used by running in from 100 to 200 feet of cable between two strings of casing, and then cementing the two strings of casing together from the surface. Sometimes a large pit is dug around the casing (where no cellar is used) and the cavity filled up with concrete into which one-inch wire lines or steel rods have been placed to extend up over the connections. These concrete blocks are built up to the sills of the derrick and make secure anchors. However, the method of anchoring the tie rods or lines is not of so much importance as long as they are perfectly secure and capable of holding all parts in place.

Bean Method

The bean is placed in the flow line from a well, usually just following a gate valve, which must be between the bean and the well, for the purpose of checking the flow from the well. The wear on the bean, due to the cutting action of the fluid passing through it and the abrasive action of any sand produced with oil, makes its life vary between wide limits. In some instances it was found necessary to change the bean several times a day, or even every hour, because the size of the hole through it would be so enlarged that the resistance to the flow would not be sufficient. The end of the bean away from the well is the first to show wear and is always found to be worn the most.

Several types of beans have been devised, and various kinds of steel used in making them, to increase their efficiency. Two factors which must be taken into consideration in deciding what kind of a bean will be required are:

First—The pressure under which the well flows.

Second—The amount of abrasive material produced with the oil.

In some wells, where the gas pressure is not high and the oil is free from sand, a bean made of soft carbon steel gives satisfactory results. With higher gas pressure, tool steel is usually used for the bean, and this is sometimes case-hardened in order to make it as resistant as possible.

In wells where more or less sand is

[1]BEAN—A solid piece of steel from a few inches to a foot or more in length, through the center of which a small hole is drilled longitudinally, and through which all the fluid from the well must pass.

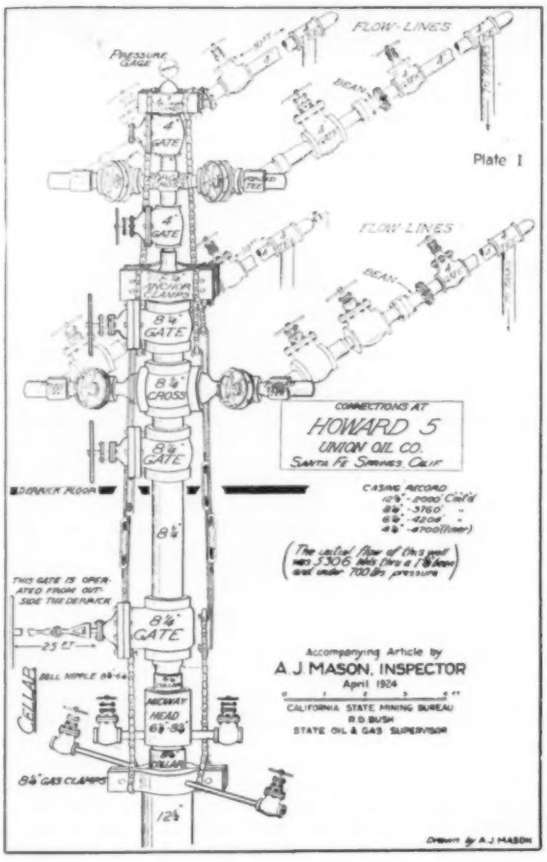
Plate I
FLOW-LINES
PRESSURE GAGE
BEAN
4" GATE
4" TEE
4" GATE
FLOW-LINES
BEAN
MICHAN CLAMPS
8¼" GATE
8¼" CROSS
8¼" GATE
DERRICK FLOOR
CASING RECORD
12½"-2000' Cm'td
8⅝"-3760' "
6¾"-4206' "
4½"-4700(liner)
(The initial flow of this well was 5306 bbls thru a 1⅝" bean and under 700 lbs pressure)
8¼"
THIS GATE IS OPERATED FROM OUTSIDE THE DERRICK
8¼" GATE
25 FT
BELL NIPPLE 8¼"
CELLAR
MIDWAY HEAD 6¾"-8¼"
8¼" GAS CLAMPS
12½"
CONNECTIONS AT
HOWARD 5
UNION OIL CO.
SANTA FE SPRINGS, CALIF.
Accompanying Article by
A. J. MASON, INSPECTOR
April 1924
CALIFORNIA STATE MINING BUREAU
R. D. BUSH
STATE OIL & GAS SUPERVISOR
Drawn by A. J. MASON

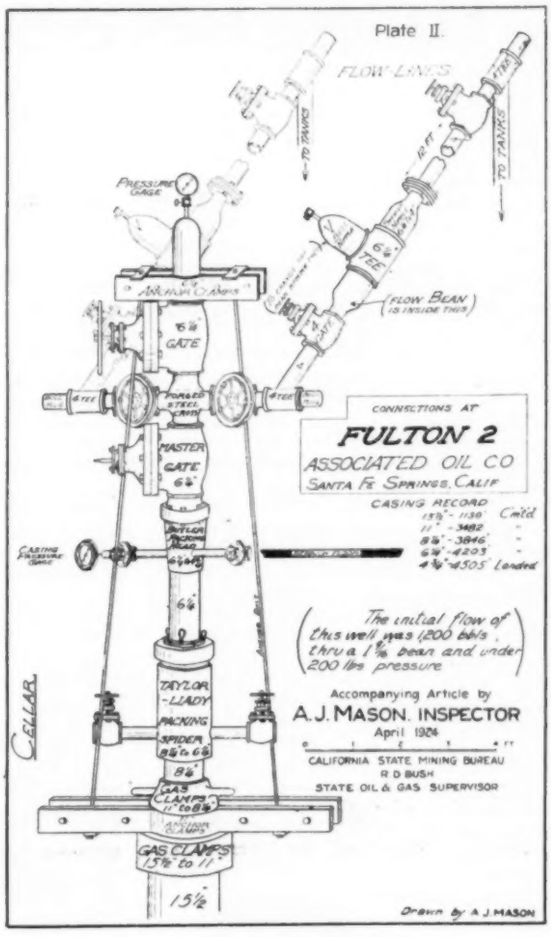
Plate II.
FLOW-LINES
TO TANKS
TO TANKS
PRESSURE GAGE
6¾" TEE
(FLOW BEAN IS INSIDE THIS)
MICHAN CLAMPS
6¾" GATE
FORGED STEEL CROSS
4" TEE
4" TEE
MASTER GATE 6¾"
CASING PRESSURE GAGE
CASING RECORD
15⅝"-1130' Cm'td
11"-3482' "
8⅝"-3846' "
6¾"-4203' "
4½"-4505' Landed
6¾"
(The initial flow of this well was 1200 bbls thru a 1⅛" bean and under 200 lbs pressure)
TAYLOR-LLADY PACKING
SPIDER 8¼" to 6¾"
8¼"
CELLAR
GAS CLAMPS 11" to 8¼"
GAS CLAMPS 15⅝" to 11"
15½"
CONNECTIONS AT
FULTON 2
ASSOCIATED OIL CO
SANTA FE SPRINGS, CALIF.
Accompanying Article by
A. J. MASON, INSPECTOR
April 1924
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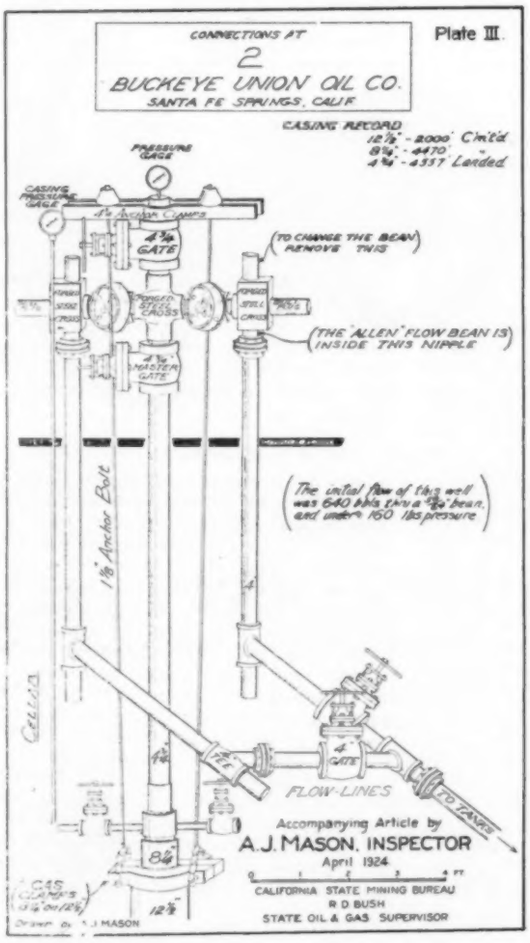
Plate III.
CONNECTIONS AT
2
BUCKEYE UNION OIL CO.
SANTA FE SPRINGS, CALIF.
CASING RECORD
12½"-2000' Cm'td
8⅝"-4470' "
4½"-4557' Landed
PRESSURE GAGE
CASING PRESSURE GAGE
4½" ANCHOR CLAMPS
4½" GATE
(TO CHANGE THE BEAN REMOVE THIS)
FORGED STEEL CROSS
FORGED STEEL CROSS
(THE "ALLEN" FLOW BEAN IS INSIDE THIS NIPPLE)
4½" MASTER GATE
1⅛" Anchor Bolt
(The initial flow of this well was 640 bbls thru a ⅝" bean, and under 150 lbs pressure)
CELLAR
4" TEE
4" GATE
FLOW-LINES
TO TANKS
8¼"
GAS CLAMPS 11" to 12½"
12½"
Drawn by A. J. MASON
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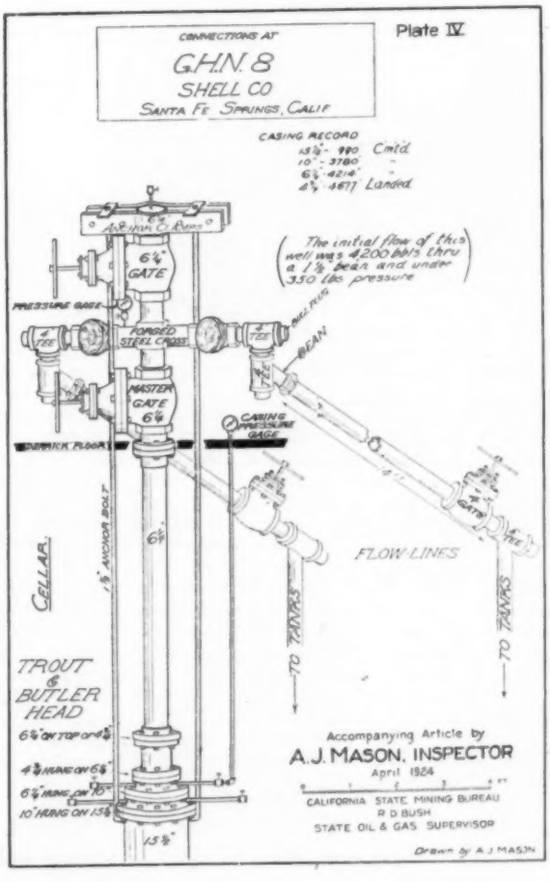
Plate IV.
CONNECTIONS AT
G.H.N. 8
SHELL CO
SANTA FE SPRINGS, CALIF.
CASING RECORD
15⅝"-990' Cm'td
10"-3780' "
6¾"-4214' "
4½"-4611' Landed
(The initial flow of this well was 4200 bbls thru a 1½" bean and under 350 lbs pressure)
6¾" GATE
PRESSURE GAGE
4" TEE
FORGED STEEL CROSS
4" TEE
BEAN
MASTER GATE 6¾"
CASING PRESSURE GAGE
DERRICK FLOOR
1⅛" ANCHOR BOLT
6¾"
CELLAR
FLOW-LINES
TO TANKS
TO TANKS
TROUT & BUTLER HEAD
6¾" on top and 4½" nine on 6¾"
6¾" nine on 10"
10" nine on 15½"
15½"
Accompanying Article by
A. J. MASON, INSPECTOR
April 1924
CALIFORNIA STATE MINING BUREAU
R. D. BUSH
STATE OIL & GAS SUPERVISOR
Drawn by A. J. MASON

produced with the oil, or where a great volume of oil is produced under high pressure, it was found that the beans wore out very quickly, the case-hardened material probably being too thin a shell to long resist the action of the fluid.

General Petroleum Corporation used a bean which had a slightly cone shaped hole drilled through it, into which was slipped a tight fitting cone shaped liner which had been case-hardened. This liner being thin, it was possible to get it completely case-hardened, and thus increase the thickness of the hardened wearing surface. In using this type of bean it is necessary that the small end of the cone point in the direction of flow so that the pressure on the line will tend to force the liner more tightly into the cone shaped hole.

Attempts have been made to conserve the gas pressure within the oil sands by placing a bean in the lower end of the tubing near the bottom of the well. The space between the tubing and the oil string is packed off just above the perforations in the oil string. This arrangement reduces the pressure at the surface and is supposed to hold back the gas and oil so that the amount of gas produced per barrel of oil is a minimum. It is claimed that the life of the well will be increased and that a greater recovery of oil will result by this 'beaning' at the bottom. The data available at present on this method of 'beaning' a well and its effect on the conservation of gas do not warrant a statement as to its practicability or efficiency. The idea, however, might warrant further investigation and engineering consideration.

Novel Design

In some respects the arrangement of connections shown in Plate I illustrates an old-style design of fittings. In other respects, such as a set of upper flow-lines added to a set of lower flow-lines, the design is novel.

At the top of the connections is shown a pressure gauge attached to a bell nipple that lies inside of 4-inch anchor clamps that fasten through chains and turnbuckles to the 8¼-inch gas clamps in the cellar. Thus the connections from top to bottom are anchored together to overcome blow-outs. Below the 4-inch anchor clamps is a 4-inch gate attached to a forged cross that directs the flow of oil through either side desired to the tanks through the top set of flow lines. This set of flow lines was designed to handle the oil coming from the tubing. Proceeding horizontally along either side, first is a gate, then a forged tee where the line makes a right angle turn through a 4-inch gate to a high-pressure union attached to the bean whose other end screws into a flanged union connected by a short nipple to a 4-inch gate attached through a 50-foot length of a 4-inch pipe to a 4-inch tee where the connections turn downward to the ground, thence to the tanks.

Referring again to the forged cross, below it lies a 4-inch gate fixed to a bell nipple which enlarges the connections from 4 to 8¼ inches, and appears in the sketch mostly hidden by 8¼-inch anchor clamps anchored to the 8¼-inch gas clamps in the cellar by means of chains and turnbuckles as shown. The 8¼-inch anchor clamps rest on an 8¼-inch gate connected to an 8¼-inch cross placed to divert the flow coming through the casing and outside of the tubing to the lower set of flow lines which consist on either side of a bell nipple leading horizontally from the 8¼-inch cross to a gate, then a forged steel tee where the line makes a square turn through two more gates leading to a high-pressure union connected to the bean whose other end fits into a flange union. From here the connections continue horizontally through a 50-foot length of 4-inch pipe to a 4-inch gate, then to a 4-inch tee where the line turns to the ground, thence to the tanks.

Referring again to the 8¼-inch cross, proceeding downward, a short nipple connects to an 8¼-inch gate that lies above the derrick floor. A long 8¼-inch nipple leads to another 8¼-inch gate that has a 25-foot stem so the gate can be opened or closed from the outside of the derrick. (The reader will possibly note a surplus of gates throughout these fittings.) Below the 8¼-inch gate, a bell nipple reduces the size of the connections from 8¼ to 6¼ inches. The larger size was used above this point for strength. Below the bell nipple is a 6¼-inch collar partly hidden by the midway head that packs off the annular space between the 6¼- and 8¼-inch casings, and leads to an 8¼-inch collar resting on 8¼-inch gas clamps tied to the anchor clamps as mentioned above. The 8¼-inch gas clamps close the space between the 8¼ and 12½-inch casings, and rest on the 12½-inch casing shown at the bottom of the sketch.

Plate II

At the top of the connections is shown a pressure gauge fixed to a bell nipple that lies inside of 6¼-inch anchor clamps fastened by anchor bolts to the 11-inch anchor clamps in the cellar, thus clamping all the fittings together. Below is a 6¼-inch gate above a forged steel cross that deflects the course of the oil to either side desired of the flow lines. Proceeding horizontally from each side of the forged steel cross is a gate leading to a 4-inch tee where the line makes a square horizontal turn through a 4-inch nipple to another 4-inch gate that connects to a swedge nipple containing the bean, or flow nipple, inside of it, and leading to a 6¼-inch tee which holds in its middle opening the bell nipple marked V in the sketch. To change the bean: remove V, reach into the tee with a wrench, and unscrew the bean from inside the swedge nipple. On the opposite end of the tee another swedge nipple reduces the size of the connections to normal, and fits into a flange union leading through 12 feet of 4-inch pipe to a gate attached to a 4-inch tee where the line turns toward the ground, thence to the tanks.

Referring again to the forged steel cross, below it lies the 6¼-inch master gate set on a Butler packing head whose function is to close the space between the 6¼- and 4¾-inch casings. The Butler packing head is placed at about the level of the derrick floor, below which a long 6¼-inch nipple leads to Taylor-Liady packing spider that packs off the annular space between the 8¼- and 6¼-inch casing. A short 8¼-inch nipple leads to the gas clamps 11 to 8¼ inches that close the space between those sizes of casings, and also hold down the 11-inch anchor clamps secured to the anchor clamps above, and resting on the gas clamps that pack off the space between the 11-inch casing and the 15½-inch casing shown at the bottom of the sketch.

Plate III

At the top of the connections is shown a pressure gauge set on a plug partly hidden by 4¾-inch anchor clamps bolted to the 8¼-inch gas clamps in the cellar by means of 1⅛-inch anchor bolts, thus clamping all the connections together. The 4¾-inch inch anchor clamps rest on a 4¾-inch gate connected to a forged steel cross that turns the flow of oil to either side desired of the flow lines proceeding horizontally on both sides to a 4¾-inch gate attached to a forged steel cross of unusual shape, being thicker on the outer side where it is liable to be eaten out by the impact of the flow. At the side of the forged steel cross fits a bull plug. On top of the forged steel cross is another bull plug that is removed whenever it is necessary to insert another size of "Allen" flow bean that is screwed in the inside of a specially constructed short nipple attached to the bottom of the forged steel cross. The nipple leads to a flange union connected downward by a 4-inch pipe to a 4-inch tee in the cellar. Most companies prefer, when possible, to conduct the flow-lines horizontally out of the derrick above the floor instead of this arrangement of leading them vertically down below the floor, thence to the tanks, because they are more accessible for repairs. At the 4-inch tee in the cellar the lines make a right-angle horizontal swing and meet as indicated in the sketch.

Referring again to the forged steel cross in the center of the "Christmas Tree," below which is the 4¾-inch master gate attached by a 4-inch pipe to a Shaffer Tool Works head that packs off the space between the 4¾- and 8¼-inch casings, and connects to an 8¼-inch collar resting on 8¼-inch gas clamps that close the space between the 8¼-inch casing and the 12½-inch casing shown at the bottom of the sketch.

Plate IV

The arrangement of connections of Plate IV may be considered the most simple and efficient of the four examples shown. At the top of the connections lies the 6¼-inch anchor clamps secured by the 1⅛-inch anchor bolts to the Trout & Butler head in the cellar thereby tieing all the connections together. The 6¼-inch anchor clamps rest on a 6¼-inch gate attached to a forged steel cross that holds the pressure gauge. At the cross the flow of oil may be directed to either side desired of the flow-lines leading out, horizontally from the forged steel cross to a 4-inch gate attached by a short nipple to a 4-inch tee where the line makes a jog through another 4-inch tee to the bean whose other end fits into a union connected by 14 feet of 4-inch pipe hor-

"Our Experience—*and* Yours"

in regard to Steel Band and Calf Wheels and Band Wheel Tugs has probably been different

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Steel Band Wheel

Made in standard diameters, faced for standard width belting. Steel Angle Arms, securely riveted to circles of Steel Cants and bolted to a Shaft Hub, eliminates the need of band wheel flanges. Furnished with metal Tug Pulley when desired.

WE WERE three years perfecting the items listed. We studied requirements and undertook to fill them, not in the manner easiest or least expensive for us, but in the manner most satisfactory to the consumer.

Therefore, if your experience has not been satisfactory—try the results of ours. We have paid the bill and offer to share the benefit with you. Try us.

The Parkersburg reputation is behind these Wheels, reputation for the best—in design, construction, delivery, freedom from experiment and desire to sell Quality and Service only.

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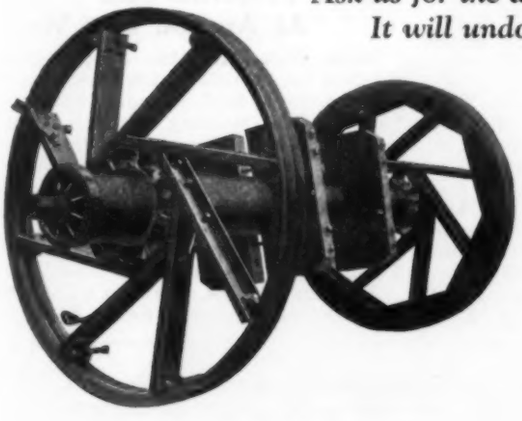
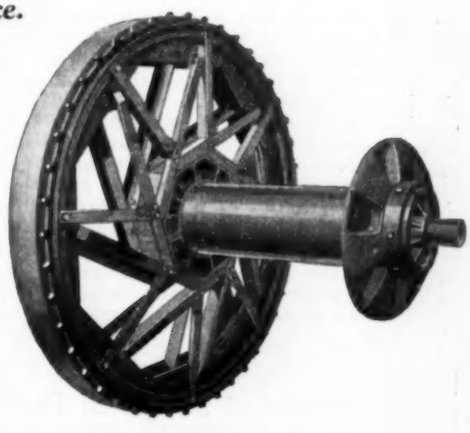


Steel Bull Wheel

Positive traction given by "V"-Grooved Tug Rim. Brake Cants securely clamped and bolted between two rings of steel Cants—easily replaced when worn. Arms attached to Tug and Brake Wheels for quick assembly in the field.



Steel Calf Wheel

Heavy bracing angles extend from each arm to each tug rim bolt. Tug rim is held firm and braced solid. It *can't* be pulled loose or out of line. Patented construction of the Shaft Hub insures a true-running, well-balanced wheel. Quick to assemble, long lasting.

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Tonkawa
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Louann
Smackover
McNeil

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COLORADO
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*District Offices ‡Frick-Reid Supply Co.

What Figures Show in Louisiana-Arkansas

Only three years old, Arkansas produces half as much as Louisiana has in twenty-one

By Staff Representative

Shreveport, La., Aug. 30.—A statistical survey of the fields of Louisiana and Arkansas reveals a present daily average total production of 196,540 barrels per day. This figure is greater, by more than 10,000 barrels per day, than the corresponding total reported one year ago; but loss, by more than 25,000 barrels per day, than averages reported about ten weeks ago, at about which time the Smackover field attained its peak of production.

Production in all of the fields of these states, excepting Irma and Cotton Valley and Sarepta, which are not yet factors in the market situation, and including Smackover, whose flush production in June exceeded 150,000 barrels of oil per day and has for some months constituted a menace to the price levels of this territory, is declining markedly from day to day. Producers are breathing easier as the Smackover flood subsides; and are deriving encouragement from recently renewed activity on the part of major purchasers of that oil.

There was stored in these two states, on August 1, last, a total of more than 43 1/3 million barrels of crude oil, of which approximately 16 1/3 million barrels was held in earthern storage in the Smackover-El Dorado district. This vast total is now being decreased to a considerable extent, however, as a result of the completion of additional trunk pipe line facilities; and by extensive tank car shipments by the Standard Oil Company of Louisiana to its refinery at Baton Rouge. Tank car movements on behalf of that company recently have averaged upward of 50,000 barrels per day.

In scanning the accompanying figures, one notes that the State of Arkansas, whose oldest field was opened only three and a half years ago, has produced almost half as much oil to date as has the neighboring state of Louisiana, in which oil was discovered in 1903, twenty-one years ago, and where additional pools were opened ten, six, and five years ago. However, to a Louisiana district, Caddo, goes the honor of having produced more oil than any other field in this territory, to date, more than 103½ million barrels. To another Louisiana field, Homer, in Claiborne Parish, goes the record of highest yield per acre, which averages 16,296 barrels per acre throughout the entire field. Centrally located properties in this field, and in the Haynesville field, nearby, have produced more than 25,000 barrels of oil per acre. One notes that the Smackover district, which, as a whole, embraces more than 40 square miles of productive area, has produced more than 66 million barrels of oil since its discovery on the last day of July, 1922; and that the Bellevue Shallow Field, in Bossier Parish, Louisiana, which embraces only 900 acres of productive territory, has produced more than 5 million barrels of oil in less than three years. The two states have produced a grand total of approximately 353½ million barrels of oil to date.

The highest present average production per well is held by Cotton Valley, the new field in Webster Parish, Louisiana; but this figure includes flush production from newly completed wells. The next best average is held by another new field, Irma, in Nevada county, Arkansas. In the heavy oil section of the Smackover district, where production is settling rapidly, a total of 1,341 wells produces an average of 64 barrels of oil per well per day. A total of 712 wells yields an average of 53 barrels of light oil per well per day. The lowest records of this character are held by the Stephens and El Dorado districts, of Arkansas. The Stephens wells produced only 20 barrels per well per day when flush; and the El Dorado district is approaching the final stages of decline.

There are now more than 3,500 producing oil wells in the state of Arkansas. A similar total is not available for the state of Louisiana, owing to the lack of recent reports concerning the number of wells still in actual operation in the old fields of Caddo, De Soto, and Red River Parishes.

izontally to a 4-inch gate fixed by a short 4-inch nipple to 4-inch tee where the line turns vertically to the ground, thence to the tanks.

Referring again to the forged steel cross, below which is the 6¼-inch master gate connected to a 6¼-inch union located at the level of the derrick floor where a long 6¼-inch nipple leads down to the Trout & Butler head shown at the bottom of the sketch. This head consists of a series of threaded flanges bolted together and closing the annular space between casings. Rings of packing between the flanges insure gas-tight connections. The top flange serves to enlarge the size of the fittings above it to 6¼-inch, for strength. Attached to the head by a long piece of small diameter pipe stands the casing pressure gauge just above the derrick floor.

Mid-Co Properties Sold At Auction Last Week

Tulsa, Okla., Aug. 25.—Properties of the Mid-Co Petroleum Company in the Mid-Continent field, including the company's office building here in Tulsa, were sold at public auction here last week for $100,000. The bond holder's committee of the company, which has been in the hands of the federal court for some time, was the only bidder at the sale, being represented by E. S. Willeman, representing the committee.

The sale must be approved by federal court before it becomes final.

Statistical Survey of Production Conditions in the Louisiana-Arkansas Territory

THESE FIGURES REFER TO OIL PRODUCTION ONLY, AND DO NOT INCLUDE GAS WELLS AND GAS-YIELDING ACREAGE

Field—	Production Averages as of One Year Ago.	Present Average Production.	No. of Oil Wells Producing.	Present Average Production Per Well.	Total Production—Discovery To Date.	No. of Acres Productive. Entire Field.	Average Yield Per Acre	Age of Field. (Years.)
ARKANSAS								
Smackover Heavy	88,000	86,015	1,341	64	{ 66,182,400 }	16,460	{ 2,473 }	2
Smackover Light	10,250	37,765	712	53		10,300		1¾
El Dorado	21,475	12,840	1,258	10	34,223,190	9,700	3,528	3½
Stephens	3,350	2,335	225	10	1 315,730	3,200	411	2
Ima-Nevada	400	1,420	18	78	431,290	320	1,347	1¼
Total	123,475	140,375	3 554	39½	112,152,610	39,980	2,805	
LOUISIANA								
Haynesville	27,350	17,980	743	24	38,490,125	6,875	5,598	3¼
Caddo	10,850	11,905	‡	‡	103 585,750	31,000	3,341	21
Homer	9,900	7,510	620	12	48,890,475	43,000	16,296	5½
Bellevue	8,000	4,665	266	17½	5,008,980	900	5,565	2¾
De Soto-Bull Bayou-Crichton	5,790	5,495	‡	‡	43,614,060	10,000	4,361	10
Elm Grove	1,200	820	37	22	998,025	1,000	998	6
Cotton Valley	....	7,575	30	252½	541,980	*400	1,355	2/3
Sarepta	75	215	3	71	31,890	*	†	2
Total	63,165	56,165	§1 699	§22 8/10	241,161,285	†53,175	*4,534	—
Grand Total, Both States	186,640	196,540	§5,253	§34	353 313,895	93,155	3,792	—

*Area undefined, therefore, Sarepta District not included in this †calculation.
‡Complete figures not available, therefore, Caddo and De Soto-Bull Bayou-Crichton Districts not included in these §calculations.

Permanence

Permanence is only accorded things that are properly designed and carefully constructed of enduring materials

The reputation enjoyed by Hughes Rock Bits endures thru the years due to correct design, quality of material and skilled workmanship.

If the cone type of rock bit had not been successful in drilling thru all hard formations the Hughes Tool Company would not today be one of the largest manufacturers of oil field tools on earth, nor would the use of its products have extended to all the rotary oil fields the world over.

The Hughes Rock Bit is extensively used for drilling thru all kinds of hard formations in the rotary oil fields of the United States and foreign countries. Speed, economy, and safety are its fundamental features.

Hughes Simplex Rock Bits

—for Speed, Economy, Safety, in All Hard Drilling

Sold by Supply Stores Everywhere

HUGHES TOOL CO. - HOUSTON - LOS ANGELES

Hughes Tools - Oil Field Pace Setters

8 VALUABLE PRIZES—See Next Page →

How Good Is Your Memory?—8 PRIZES

Do You Know These Men?

A few of the thousands of field men who are users and boosters of Hughes Rock Bits and Tool Joints

Name Them for Valuable Prizes

Represented in the pictures shown on this page are contractors, superintendents, foremen, drillers and tool pushers from the rotary oil fields of the country.

NAME AS MANY OF THEM AS YOU CAN AND MAIL TO THE HUGHES TOOL COMPANY, HOUSTON. Eight valuable prizes will be given the men sending in the nearest correct list of names. Give the number and the name. Contest closes 6 p. m., September 30, 1924.

1st Prize—23 Jewel Howard Watch.
2nd Prize—Automatic Shotgun.
3rd Prize—Leather Traveling Bag.
4th, 5th and 6th Prizes—Solid Gold Hughes Simplex Bit Watch Fob.
7th Prize—Gold Watch Chain.
8th Prize—Gold Pocket Pencil.

Tying contestants will each be given the full award. If you can name only a few, send them in.

JUDGES:
S. P. Brown, Sales Manager, Hughes Tool Company
C. S. Johnson, Ass't Sales Manager, Hughes Tool Company
T. P. Rogers, Advertising.

HUGHES TOOL COMPANY HOUSTON, TEXAS
Los Angeles, Calif.

Summary of Field Operations for August

(Continued from page 26.)

Eastern States

PENNSYLVANIA

County—	Completions	Producers	Gas Wells	Failures	Initial Prod.
Allegheny	2	..	..	2	....
Beaver	4	2	..	2	4
Bradford	117	114	..	3	414
Butler	14	9	..	5	20
Center-Middle	19	18	1	..	58
Clarion	9	6	3	..	13
Greene	14	..	10	4	....
Mercer	2	2	..	..	4
Venango	44	43	..	1	107
Washington	1	1	..	..	15
Totals	226	195	14	17	635

OHIO

Allen	7	5	2	..	46
Ashland	2	..	1	1	....
Athens	10	2	5	3	20
Auglaize	6	6	..	..	100
Belmont	1	1	..	..	3
Coshocton	6	6	..	..	78
Cuyahoga	3	..	2	1	....
Darke	5	4	..	1	57
Fairfield	2	1	1	..	60
Hancock	8	7	1	..	143
Hardin	5	3	1	1	105
Harrison	1	1	..	..	2
Hocking	10	8	2	..	318
Holmes	8	2	6	..	115
Jackson	2	..	2	..	....
Knox	12	9	3	..	42
Licking	19	13	3	3	351
Lorain	3	..	3	..	....
Medina	6	..	4	2	....
Meigs	3	3	..	..	9
Mercer	15	15	..	..	61
Monroe	2	2	..	..	4
Morgan	6	6	..	..	240
Muskingum	6	4	..	2	153
Noble	18	8	3	7	22
Ottawa	7	7	..	..	81
Paulding	5	5	..	..	600
Perry	9	5	1	3	24
Richland	4	..	4	..	....
Sandusky	3	3	..	..	35
Seneca	1	..	..	1	....
Shelby	3	1	2	..	2
Van Wert	4	4	..	..	55
Washington	20	13	3	4	110
Wayne	11	5	5	1	300
Wood	20	19	..	1	350
Wyandot	1	1	..	..	50
Totals	254	169	54	31	3,536

WEST VIRGINIA

Braxton	4	1	..	3	150
Cabell	5	1	2	2	3
Calhoun	7	2	5	..	6
Clay	2	1	1	..	5
Doddridge	15	9	5	1	185
Gilmer	11	..	7	4	....
Hancock	1	..	1	..	....
Harrison	4	1	3	..	2
Jackson	1	..	..	1	....
Kanawha	14	2	12	..	13
Lewis	10	..	4	6	....
Lincoln	12	1	11	..	2
Logan	1	..	1	..	....
Marion	4	2	2	..	10
Marshall	9	3	5	1	60
Monongalia	3	2	1	..	8
Pleasants	8	6	..	2	24
Ritchie	23	5	5	13	50
Roane	3	1	2	..	5
Tyler	1	..	1	..	....
Wetzel	4	3	1	..	18
Wirt	5	2	..	3	4
Wood	6	3	..	3	29
Totals	153	45	69	39	574

MISSISSIPPI

Chickasaw	1	..	..	1	....
Pike	1	..	..	1	....
Tallahatchie	1	..	..	1	....
Tishomingo	1	..	..	1	....
Totals	4	..	..	4	....

KENTUCKY

County—	Completions	Producers	Gas Wells	Failures	Initial Prod.
Allen	32	25	..	7	542
Barren	26	23	1	2	273
Cumberland-Monroe	14	8	..	6	995
Elliott	3	2	..	1	10
Estill	5	3	..	2	11
Floyd	5	2	2	1	65
Greene	1	1	..	..	4
Johnson-Magoffin	17	17	..	..	180
Lawrence-Johnson	19	19	..	..	390
Lee	18	16	..	2	400
Metcalf	2	..	1	1	....
Morgan	1	..	1	..	....
Owensboro	9	6	..	3	60
Russell	3	3	..	..	175
Warren	17	13	..	4	198
Wayne	5	4	..	1	29
Totals	177	142	5	30	3,332

ILLINOIS

Clark	7	5	2	..	235
Crawford	4	2	..	2	16
Lawrence	3	2	..	1	11
Monroe	1	1	..	..	25
Wabash	6	3	..	3	350
Totals	21	13	2	6	637

INDIANA

Jay	6	6	..	..	82
Knox	1	1	..	..	20
Randolph	1	1	..	..	5
Spencer	1	1	..	..	2
Sullivan	2	..	..	2	....
Totals	11	9	..	2	109

NEW YORK

Allegany	41	41	..	..	112
Bolivar	6	6	..	..	111
Dagget Hollow	1	1	..	..	3
Kansas Hollow	1	1	..	..	15
Pleasant Valley	1	1	..	..	5
Richburg Hill	4	4	..	..	35
Wirt	2	2	..	..	25
Totals	56	56	..	..	306

Oklahoma

Alfalfa	1	..	..	1	....
Beckham	7	..	..	7	....
Burbank Field	40	38	..	2	4,927
Caddo	3	3	..	..	835
Carter	41	34	2	5	3,667
Creek	68	46	4	18	12,783
Garfield	4	2	..	2	80
Garvin	4	3	..	1	125
Grady	2	..	2	..	....
Grant	4	..	..	4	....
Hughes	18	17	..	1	7,242
Jefferson	2	..	1	1	....
Kay (outside Burbank)	22	15	2	5	41,146
Lincoln	21	21	..	..	22,054
Muskogee	3	..	1	2	....
Noble	5	5	..	..	4,705
Okfusgee	8	6	..	2	1,836
Okmulgee	24	7	2	15	485
Osage (Outside Burbank)	69	39	7	23	22,484
Pawnee	11	10	..	1	1,191
Payne	2	1	..	1	305
Pontotoc	2	2	..	..	60
Pushmataha	1	..	..	1	....
Roger Mills	1	..	..	1	....
Seminole	58	51	..	7	68,820
Stephens	13	6	2	5	173
Tulsa	30	16	1	13	927
Wagoner	6	4	..	2	55
Washita	1	..	..	1	....
Totals	471	326	24	121	193,900

OKLAHOMA SUMMARY OF MONTHLY PRODUCTION OF FIELDS

Fields—	Production
Burbank	2,437,561
Bristow	1,722,174
Osage	1,662 324
Tonkawa	1,604,870
Cromwell	1,769,604
Cushing	826,328
Okmulgee	805,349
Stroud	588,628
Hewitt	621,984
Healdton	431,582
Duncan & Walters	296,236
Wewoka	230,206
Papoose-Gilcrease	356,035
Other Fields	2,434,740
Totals	16 787,621

Kansas

County—	Completions	Producers	Gas Wells	Failures	Initial Prod.
Butler	3	1	..	2	75
Chautauqua	2	1	..	1	60
Cowley	31	22	2	7	13,725
Coffey	1	..	..	1	....
Chase	1	..	..	1	....
Clay	1	..	..	1	....
Elk	5	3	2	..	360
Greenwood	36	26	2	8	3,240
Harvey	1	1	..	..	450
Lyons	1	..	..	1	....
Marion	3	..	..	3	....
Montgomery	2	2	..	..	320
Russell	2	1	..	1	150
Trego	1	..	..	1	....
Washington	1	..	..	1	....
Woodson	2	2	..	..	95
Totals	93	59	6	28	18,475

KANSAS SUMMARY OF MONTHLY PRODUCTION BY FIELDS

Field—	Barrels
Eldorado	527 744
Greenwood	653,356
Elbing and Peabody	262,973
Fox-Bush	163,556
Augusta and Douglas	105,059
Blankenship	93,155
Florence and Covert	79,298
Rainbow Bend	244,001
Other Fields	511,686
Totals	2,640,828

Texas

Field—	Completions	Producers	Gas Wells	Failures	Init. Prod.	Monthly Prod.
N. Texas	166	89	..	77	8,320	2,480,985
Cent. & W. Texas	116	77	..	39	22,315	5,378,125
Gulf Coast	65	50	1	14	15,327	2,406,302
Tex. Misc.	27	23	3	1	13,535	1,683,040
Totals	374	239	4	131	59,497	11,948,452

NORTH TEXAS

Field—	Completions	Producers	Gas Wells	Failures	Initial Prod.
Archer County	70	39	31	3,998	911,620
Electra	37	22	15	1,685	657,820
Burkburnett	17	8	9	397	584,385
Young County	11	2	9	140	128,715
K-M-A	13	10	3	1,170	102,800
Iowa Park-Shappell	7	5	2	330	49,570
Panhandle dist.	2	2	..	400*	31,810
Petrolia-Clay County	3	..	3	....	13,520
Jack County	..	..	..	....	745
Wildcats	6	1	5	200	.....
Totals	166	89	77	8,320	2,480,985

*Includes 37,250,000 feet gas.

GULF COAST

Field—	Completions	Producers	Gas Wells	Failures	Init. Prod.	Monthly Prod.
Barbers Hill	..	..	..	..	....	5,494
Batson	9	9	..	..	217	64,250
Big Hill	..	..	..	..	....	589
Blue Ridge	..	..	..	..	....	21,266
Damon Md	..	..	..	..	....	45,570
Dayton	..	..	..	..	....	3,596
Goose Creek	11	10	..	1	1,535	338,055
High Island	..	..	..	..	....	3,534
Hockley	..	..	..	..	....	682
Hull	10	6	..	4	2,620	668,360
Humble	..	..	..	..	....	229,958
Markham	..	..	..	..	....	4,216
Nacogdoches	..	..	..	..	....	1,410
Orange	14	13	..	1	8,885	405,560
Pierce Jct.	..	..	..	..	....	6,813
Richmond	1	..	..	1	....	3,007
Saratoga	6	3	..	3	73	45,291
Sour Lake	3	1	..	2	6	139,562
Spindle Top	3	3	..	..	116	29,729
W. Columbia	6	5	1	..	1,875	389,360
Wildcats	2	..	..	2	....	.....
Totals	65	50	1	14	15,327	2,406,302

CENTRAL & WEST TEXAS

Field—	Completions	Producers	Failures	Init. Prod.	Monthly Prod.
Corsicana-Powell	17	14	3	553	2,457,430
Mexia district	..	..	..	....	965,745
Stephens County	24	18	6	5,085*	629,180
Richland (Navarro County)	15	15	..	9,767	570,275
Ranger-Eastland	15	9	6	420†	217,930
Desdemona-Gorman	5	3	2	45	202,620
Reagan County	2	2	..	5,750	129,985
Moran-Ibex dis.	2	2	..	240	108,845
Mitchell County	5	4	1	400	44,705
Strawn-Palo Pinto County	11	3	8	220‡	27,870
Brown County	10	6	4	95§	15,875
Coleman County	1	..	1	....	4,220
Thrall-Williamson County	..	..	..	....	1,985
Scurry County	..	..	..	....	1,460
Wildcats	9	1	8	40	....
Totals	116	77	39	22,315	5,378,125

*Includes 62,000,000 cu. ft. gas.
†Includes 12,000,000 cu. ft. gas.
‡Includes 3,000,000 cu. ft. gas.
§Includes 13,000,000 cu. ft. gas.

TEXAS MISCELLANEOUS

Field—	Completions	Producers	Gas Wells	Failures	Init. Prod.	Monthly Prod.
Luling	15	14	..	1	12,100	1,464,800
Mirando	12	9	3	..	1,435	124,000
Somerset	..	..	..	..	....	78,120
Rockdale-Minerva	..	..	..	..	....	16,120
Totals	27	23	3	1	13,535	1,683,040

Louisiana

Anse La Butte	..	..	..	..	....	682
Bellevue	8	6	1	1	61	144,956
Bull Bayou	..	..	..	..	....	140,740
Caddo	5	5	..	..	68	376,278
Cotton Valley	14	13	..	1	17,440	251,403
Edgerly	..	..	..	..	....	16,554
Elm Grove	..	..	..	..	....	26,660
Evangeline	4	3	..	1	160	18,724
Haynesville	..	..	..	..	....	553,288
Homer	1	..	..	1	....	233,864
Monroe	14	..	13	1	....	.....
Sarepta	1	1	..	..	40	6,200
Vinton	2	2	..	..	225	185,597
Wildcats	9	..	..	9	....	.....
Totals	58	30	14	14	17,997	1,954,946

Arkansas

El Dorado	2	1	..	1	175	389,856
Irma	3	1	1	1	100	45,198
Smackover	124	114	3	7	17,305	3,979,098
Stephens Dist.	6	6	..	..	135	69,037
Wildcats	8	..	..	8	....	.....
Totals	143	122	4	17	17,715	4,483,189

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The "Western" Improved Wire Line Clamp is so designed that when "hitching on" it uniformly grips the line as the liners entirely encircle it. This saves a great amount of wear on the line.

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Million Barrels of Oil Los Angeles to Bayonne

Los Angeles, Calif., Aug. 30.—During the past week 28 tankers left Los Angeles harbor, carrying 1,603,006 barrels of crude, 486,604 barrels of fuel oil, and 104,289 barrels of gasoline. Of the total crude moved, 907,557 barrels went to Atlantic domestic coast, of which 833,041 barrels went to Bayonne and 74,516 to Philadelphia. Two shipments of fuel oil for Pan American also went to Bayonne.

West coast domestic ports drew 695,449 barrels of crude, most of which went to Richmond for the Standard. One cargo of gasoline went to Seattle. Honolulu drew 18,556 barrels of gasoline and another went to Shanghai.

Record for the past two weeks follows:

	Last Week	Previous Week
Tankers departed	28	27
Total crude moved	1,603,006	1,361,810
Total fuel moved	486,604	597,644
Total gasoline	104,289	.....
Total kerosene	.....	50,580
Crude, Pacific domestic	695,449	406,689
Fuel, Pacific domestic	208,031	262,059
Gasoline, Pacific domestic	35,733	.....
Crude, Atlantic domestic	907,557	589,470
Fuel, Atlantic domestic	172,654	.....
Crude, foreign	.....	365,651
Fuel, foreign	105,919	335,585
Gasoline, foreign	68,556	.....
Kerosene, foreign	.....	50,580

Artesian Flow Pressure Stabilizer on Gas Flow to Pumping Power at Humble

By holding lease gas pressure against the flow of an artesian well, a non-fluctuating fuel supply has been provided for the pumping power engine on the Cezeaux & Martin property in the Humble field. The device consists of

Old Gas Separator serves as stabilizing unit for Humble operator

a discarded gas separator, which has been set upright, so gas feeds into it from the top, while water from an artesian well feeds into it from the bottom. An overflow pipe from the bottom, allows water to discharge when gas pressure overcomes the well pressure, allowing a steady gas flow to be maintained with the water discharge acting as a stabilizer.

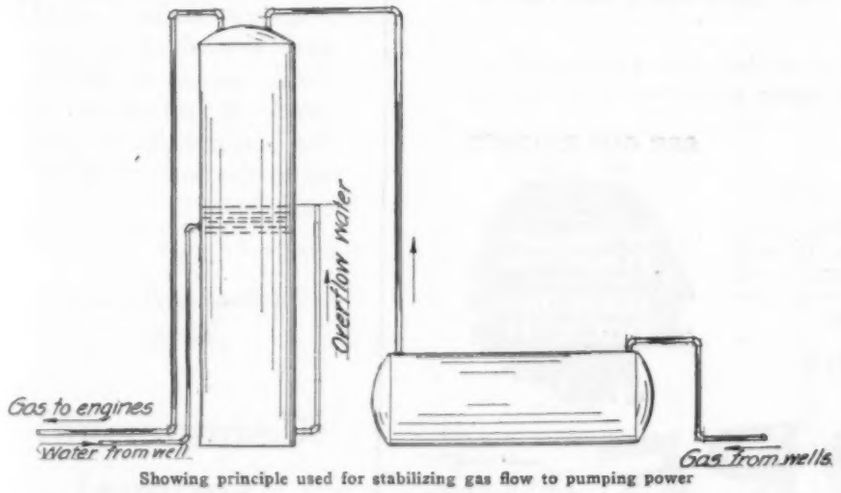
Gas fuel lines on this lease all feed into one separator near the power plant. The fuel line to the engine is installed as in other instances.

But a two-inch line runs from this gas separator to the top of the pressure device some 50 yards from the gas separator. The water from the artesian well, part of the lease property, feeds into the device from the bottom.

As operated at present, this device stands about two-thirds full of water and one-third full of gas. The water pressure is steady and can be controlled by a valve on the line to the device. But the gas pressure fluctuates as it comes from the lease, going up and down according to the action of wells.

So a steady water pressure works against a fluctuating gas pressure in the device. To take care of this fluctuation at the device instead of allowing it to pass into the engine, a one-inch water discharge pipe is attached to the bottom and extends at an angle to the height of the device.

As this discharge water pipe is the weakest point of the whole system, any fluctuation of the gas pressure above the water pressure, results in water being forced from this small pipe, allowing the gas pressure to be maintained evenly at all other points, and to be controlled by the pressure from the water well.



Showing principle used for stabilizing gas flow to pumping power

Using "Barrel Laundry" In Texas Coast Fields

Here is one field convenience, the "roughneck's" laundry. It has two attractive characteristics: It is a pleasing reminder of "the good old days," and it's easy to operate.

The laundry is nothing more than an ordinary barrel with a steam pipe connection, but it's the scene of many a blue Monday's activity on the Koehler

A typical "Barrel Laundry" used in the field

lease, of The Texas Company, at Humble, Texas. The idea of such a laundry is not confined to one lease in the Gulf Coast. Most any coastal field can boast of several such laundries. In this particular instance the steam line runs to the barrel from the boiler house about 50 feet away.

When it is time for the week's washing to be done, all that is necessary is to put whatever is to be washed in the barrel, fill it about half full with water and turn on the steam.

This particular laundry was in action when the camera clicked. A line hangs nearby, ready for the washing to be hung in the sun.

The building in the background is another field contrivance. It is a shower-equipped bath house. Although an improvised one, it does the work as well as one in the Ritz. It consists simply of a half-gallon bucket with a well perforated bottom. Said bucket hangs on the faucet of a hydrant. Open faucet—Presto!

Scheme for Protecting Gauger's Hydrometers

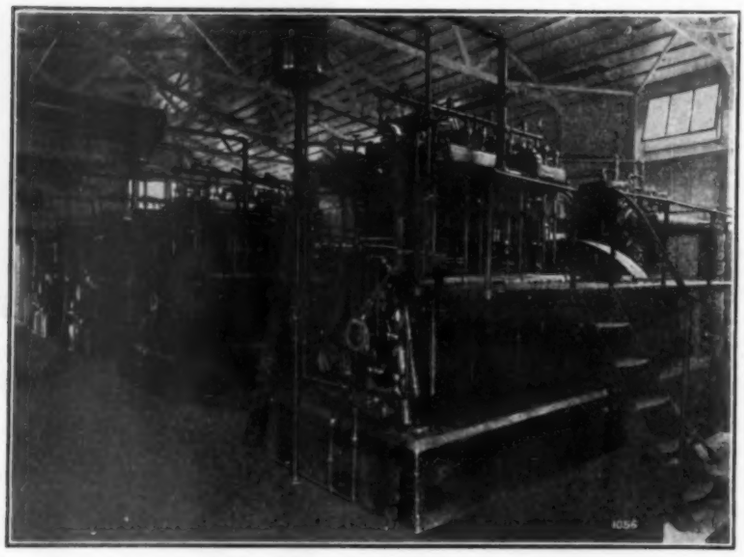
Annual replacement of hydrometers by the various major pipe line companies and other crude purchasing agencies by reason of the delicate instruments being broken by the gauger while motoring from lease to lease over bad roads can be materially reduced by using a simple container made of pipe. A pipe line superintendent for one of the larger companies in the Mid-Continent district has supplied all of his gaugers with a container made of

(Continued on page 55.)

Here are some new field wrinkles. They show how these field men are developing simple methods for reducing operating costs. You probably have some schemes equally as good for your lease. Why not send them in? And remember The OIL WEEKLY will pay you not less than $5.00--more if the idea is worth it—for each new wrinkle published.

ENGINEERS & CONTRACTORS
IN NATURAL GAS AND OIL

Gas Compressing Plants That Stand Up



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FIELD NOTES AND PRODUCTION STATISTICS

Much of California Production Shut In

Output of Los Angeles basin shows increase and further gains are expected

By W. E. Green

Los Angeles, Calif., Aug. 30.—Approximately 26,000 barrels of production has been closed in recently in some of the older California fields, due to growing stocks and the slow demand for the oil.

Production in six Los Angeles Basin fields the past week was about 342,500 barrels a day. With Dominguez and Rosecrans to draw from, the production for the same fields at end of year should be very close to present production, although there may be declines in the meantime. Allowing for production from other fields that may be uncovered, extensions, deeper sands, etc., it is expected that Los Angeles Basin production at end of year will be as great as at present, and very likely greater.

Old Wells Closed In

The shut in production is in the older fields. The Shell Company has closed in about 12,000 barrels at Coalinga, Union has about 4,000 barrels shut in production at Santa Maria, General Petroleum has shut in about 4,000 at Lost Hills, and the same company is credited with 2,000 barrels shut in at Midway-Sunset. The Union and General Petroleum have closed in about 4,000 barrels at Brea-Olinda. In addition to this amount, the Standard has some shut in production in some of the older fields, but not in large amounts. Scattered shut in wells might swell the total to some extent.

Drilling activity is not slowing down in California to an extent that will help out. During the past week there were drilling approximately 250 wells in Southern California fields, as follows: Long Beach, 64 drilling wells; Santa Fe Springs, 13; Torrance, 88; Dominguez, 30; Rosecrans, 50. At Long Beach, there are 96 idle wells which should be drilling. It is expected that a large percentage of this number will be abandoned for one cause or another, mostly on account of being located in outlying districts. At Long Beach 45 of the drilling wells are below 4000 feet.

Active at Rosecrans

Locations are numerous at Rosecrans, and it is expected that within another thirty to sixty days, about 75 wells at least will be drilling in the field. Rosecrans only has a daily production of 1675 barrels from two wells. Quite a number of wells are in the sand, but are having trouble in securing a water shut off. The Union's Rosecrans, the first well in the field to find oil, has never been able to secure a shut off. Count has been lost of number of attempts made to cement the string of casing. The formation in this field is shale and thin streaks of pay sand. It is thought by some that the matter of shutting off the water in some of the wells will never be accomplished. It may be possible to continue to drill deeper until a formation is found that will hold the cement and then drill still deeper for the pay, if it is still to be found. This field may be producing a large amount of oil in the next 60 to 90 days or it may be producing little more than at present time. One guess is as good as another. The formations must be solved first and no one knows how much time that will require.

New Locations at Dominguez

At Dominguez, there are 30 drilling wells. The production of the field has mounted to 30,000 barrels a day and there are several wells which should be completions in the next thirty days. The Marland well, which was reported as a completion last week, did not clean up and when it was learned that it was making more than 35 per cent of emulsion and water, it was killed and recementing job undertaken. The United well, also in southeastern edge of the field, is not yet completed. A water shut off was secured and it is being drilled carefully, every inch being cored ahead of the drill. The Associated is making three locations on its tract in the southeast section, which will require that Shell Company and others make offset locations. The Associated lost a hole and work has been started on the second after skidding the rig.

During the past week, Shell Company's Reyes 3A was completed at Dominguez for 1000 barrels at 4148 feet, while same company's Childs 1 was recompleted for 2000 barrels at 4223 feet. The last named well has a tubing pressure of 135 pounds while the casing pressure is 500 pounds. It is flowing through a one-inch bean.

Two New Union Wells

Union Oil Company of California Thursday placed on production its Hellman No. 6 well in the Dominguez field. The new well is flowing 2500 barrels daily of 32 gravity oil into the tanks. The hole is 4251 feet deep.

Hellman No. 6 is the second well brought in by the Union at Dominguez during the past week, Callender No. 6 having come in on Monday with a daily production of 2600 barrels. The wells are two of the best Southern California completions in recent weeks.

The Union has completed eleven wells in the Dominguez area since discovering the district a year ago next month. Six of these are on the Hellman, four on the Callender and one on the Carson lease. The company is still drilling two wells on the Callender, one on the Hellman and two on the Carson property.

Hellman No. 6 is a second line well, located two hundred yards north of Hellman No. 4. Hellman No. 7, the only other drilling well on the lease, is drilling at 4115. This well was completed several weeks ago but its production of 400 barrels was not satisfactory. It is thought that deepening will result in a much better well.

Chances of good production in the northwest section of Dominguez were brighter as a result of coring operations on the Union's Callender No. 4, which found a good oil showing at 4706-10 feet and 4710-16 feet.

CALIFORNIA FIELD OPERATIONS

The following table from statistics compiled by State Oil and Gas Supervisor R. D. Bush for California for the past several weeks gives a true insight into field activities:

Month of—	New Wells started	Water Shut-off tests	Deepening jobs	No. Wells aband.
June, 1923	120	195	59	22
July	94	145	46	23
*August	96	141	41	26
September	122	194	39	36
October	114	131	38	25
November	100	151	48	23
*December	105	181	37	32
January, 1924	120	111	48	23
February	125	97	49	47
*March	142	183	81	99
April	130	154	76	34
*May	156	171	79	34
June	118	149	66	18
Week ending—				
July 5	22	27	10	5
July 12	24	36	12	14
July 19	44	31	20	5
July 26	22	35	27	4
August 2	24	46	17	9
August 9	22	31	11	5
Aug. 16	25	24	25	5
Aug. 23	16	21	19	5

*Denotes months with five weeks.

Scheme for Protecting Gauger's Hydrometers

(Continued from page 53.)

nickle plated brass plumbing pipe lined with wool covered sheep skin.

This type of a container can be made in the average field shop from scrap joints of plumbing pipe about one and a half inches in diameter, and any length desired. A sheet of brass or copper plate can be soldered to form a bottom for the pipe, while a strip of sheep skin can be cut to fit within the pipe in order to serve as a cushion for the hydrometer. A cap is made by heating a short length of the same size of pipe and expanding same just enough to fit snugly over the container. A brass or copper plate is also soldered in the top of the cap, and it is lined with sheep skin.

Average Daily Production for all U. S. Fields

Oklahoma

	Past Week	Prev. Week
Tonkawa	85,615	75,415
Burbank	73,975	75 325
Bristow	54,865	55,000
Osage (outside Burbank)	53 820	53,590
Cromwell	60,350	62,035
Cushing	26,420	26,300
Okmulgee	26,000	26,085
Stroud	19,515	21,905
Hewitt	19,795	19,890
Healdton	13 525	13,595
Glenrease-Papoose	11,635	13,200
Duncan and Walters	9,380	9,400
Wewoka	7,045	7,400
Other fields	78,820	79,000
Totals	540,760	538,160

Kansas

Greenwood	21,290	21,380
Eldorado	17,000	17,100
Elbing and Peabody	8,395	8,450
Rainbow Bend	8 000	8,120
Fox-Bush	5,175	5,190
Augusta and Douglas	3,300	3,320
Blankenship	2,970	2,975
Florence and Covert	2,525	2,540
Other Fields	16,970	17,000
Totals	85,625	86,075

Wyoming-Colorado

Salt Creek	88,975	90,000
Teapot	2,270	2,725
Big Muddy	3,830	3,780
Grass Creek	3,200	2 720
Elk Basin	1 945	1,190
Rock River	3,300	3,150
Lance Creek	1,990	1,915
Poison Spider	745	655
Lost Soldier	5,390	4,680
Craig, Colorado	2,175	1,900
Other Fields	3,700	4,000
Totals	117,620	116,715

Montana

Cat Creek	3 920	4,145
Kevin-Sunburst	3,825	3,960
Miscellaneous	105	100
Totals	7,850	8,205

California

Los Angeles, Calif., Aug. 30.—The daily average production of the California fields the past week, compared with the previous week, with number of producing wells in several of the Los Angeles Basin fields, was about as follows:

	Last Week	No. Prod. Wells	Prev. Week
Long Beach	153,000	483	151 000
Santa Fe Springs	58 500	341	59,750
Huntington Beach	42,000	265	43 500
Torrance	57,500	419	58,250
Dominguez	30,000	18	23,500
Rosecrans	1 675	2	1,675
Others	271,325		278,325
Totals	614,000		616,000

Louisiana

	Last Week	Prev. Week
Haynesville	17,615	17,980
Caddo Light	10,000	10,005
Caddo Heavy	1,995	1,900
Homer	7,840	7,510
Bellevue	4,625	4,665
Vinton	5,710	5,600
Bull Bayou	4,750	4,800
Cotton Valley	7,050	7,575
Elm Grove	825	820
Evangeline	660	600
Edgerly	500	500
Anse La Butte	20	20
Totals	61,590	61,975

Arkansas

Smackover Heavy	85,150	86,015
Smackover Light	37,050	37,765
El Dorado	12,030	12,840
Stephens	2,320	2,335
Irma	1,400	1,420
Totals	137,950	140,375

Texas

NORTH-CENTRAL

	Past Week	Prev. Week
Corsicana-Powell	77,310	77,975
Archer County	29,280	29,615
Mexia	27,600	27,600
Electra	21 080	20 585
Stephens County	19,660	20,450
Richland	24,000	21,800
Burkburnett	17,970	18,270
Ranger-Eastland	7,040	7 035
Desdemona-Gorman	6,470	6,535
Reagan County	5,950	4,090
Young County	4,020	4,085
K-M-A	3 360	3 210
Moran-Shackelford County	3,165	3,250
Currie	2,530	2,650
Iowa Park-Shappell	1,480	1,425
Mitchell County	1 645	1,630
Panhandle District	1,085	1,140
Strawn-Palo Pinto County	1,000	950
Brown County	560	545
Petrolia-Clay County	440	445
Coleman County	130	135
Thrall-Williamson County	70	65
Scurry County	70	15
Jack County	20	20
Totals	255,935	253,620

GULF COAST

Hull	18,875	19,900
West Columbia	12,850	12,700
Goose Creek	11,300	10,550
Orange	11,150	9,200
Humble	7,050	7,100
Sour Lake	4,575	4,500
Batson	1,775	1,800
Damon Mound	1,450	1,500
Saratoga	1,490	1,450
Spindle Top	950	900
Blue Ridge	650	800
Pierce Junction	210	225
Markham	110	175
Barbers Hill	160	160
Nacogdoches	110	110
Dayton	125	110
High Island	125	100
Richmond	50	70
Hockley	30	15
Big Hill	20	15
Stratton Ridge	60	..
Totals	73,115	71,380
Totals North Texas	255,935	253,620
Luling	35,000	38,000
Mirando	4,000	4,000
Somerset	2,600	2,500
Rockdale-Minerva	475	500
Totals	371,125	370,000

Condensed U. S. Production for Twelve Months

(Stated in Barrels)

This table is carried each week by The OIL WEEKLY, and shows daily production average for each state or section. Figures for Oklahoma, Kansas, Texas, Louisiana, Arkansas and Mountain States are compiled by The OIL WEEKLY, while estimates for California and Eastern States are furnished by the American Petroleum Institute.

Daily average for month	*Mid-Continent	North Central Texas	Texas Coastal	†Texas Total	Kansas	Okla.	Louisiana	Eastern States	Wyoming-Montana	Calif.	Ark.	U. S. Total
August	726,981	217,208	105,966	323.148	89,998	419.775	97,936	120,750	83,938	375,000	28,834	1,618,765
September	716,107	207,467	107,790	314,932	89,760	418,880	101,857	114,200	80,490	387,000	33,135	1,540 371
October	714,906	200,465	115,130	316,320	90,404	424,037	97,502	116,375	86,412	423,750	34,127	1,489,005
November	711,521	199,223	114,150	388,376	91,098	421,200	93,410	116,375	106,092	450,000	77,225	1,668,776
December	692,702	170,187	111,819	242,010	87,508	435,007	86,513	114,900	103,679	484,000	107,732	1,722,349
January (1923)	708,372	184,885	115,628	304,790	86,720	436,767	81,205	113,500	123,254	517,500	111,930	1,770.645
February	712,007	180,364	96,984	286,493	85,298	446,345	78,068	112,500	110,328	587,500	101,346	1,805,496
March	720,287	184,582	89,873	283,355	86,012	449.693	75,352	109,900	118,580	653,000	108,630	1,888,522
April	756,381	192,148	92,320	293,780	86,133	478,100	76,854	106,000	127,860	711,250	102,099	1,983,026
May	793,774	203,776	90,905	304,032	85,500	504,498	75,368	109,125	125,680	700,125	109,033	2,010 840
June	824,297	217,162	92,240	320,250	85,255	521,880	72,745	110,300	129,559	773,000	133,592	2,159,818
July	866,665	274,330	91,795	378,335	84 785	508,405	70,085	113,000	137,300	851,000	132,395	2,275,305
August	826,982	278,574	94,398	393,780	82,741	464,416	68,739	112,625	137,909	866,250	123,000	2,251,966
September	830,517	371,730	93,649	443,461	77,078	421,763	68,935	108,400	157,742	858,700	127,955	2,269 176
October	876,059	408,036	84,120	511,483	71,362	371,657	65,305	107,750	139,912	823,125	125,145	2,240,741
November	935,975	479,383	82,747	580,700	69,337	287,253	64,701	108,125	151,225	768,275	124,188	2,253,806
December	729,591	283,130	78,033	378,478	68,444	378,017	61,138	110,300	146,770	723,845	120,049	1,987,041
January (1924)	685,540	243,120	75,085	334,485	67.815	374,605	59,125	108,000	144,735	698,965	114,255	1,900.985
February	729,933	254,180	81,131	362,849	68,183	407,568	59,449	104,500	141,775	675,425	114,726	1,934 476
March	762,684	284,874	78,567	388,221	69,864	407,946	55,783	97,800	128,352	650,790	119,869	1,917.023
April	777,590	276,595	76,755	380.005	71.015	479,980	54,740	101.250	127,700	640,825	128.750	1,943,270
May	763,320	267,475	74,175	374,915	71,490	424,355	60,655	103,800	127,770	640,930	148,630	1,952,545
June	799,230	260,785	74,335	375.310	74,265	464.175	62,660	105.750	125,735	628,400	157,165	1,993,465
July	815,830	254,665	75,445	378,365	81,545	479,620	63 855	107,175	124 305	620,175	148,655	2,003,695
Aug 2	830,370	254,540	80,765	386,330	84,955	490,875	63,120	107,000	123,865	622,000	147,310	2,025,455
Aug. 9	852,615	256 060	78,235	383.320	86,135	510,420	61,205	107,000	122,170	625 000	145,580	2,032,310
Aug. 16	865,030	252.440	75,015	374 455	86,030	526 560	65,095	107 000	123 050	619,000	142,475	2 043,665
Aug. 23	877,855	253 620	71,380	370,000	86,075	538,160	61,975	106,500	124,920	616,000	140,375	2 044,005
Aug. 30	882,320	255,935	73,115	371,125	85,625	540,760	61,590	107,500	125,470	614,000	137,950	2,044,020

*Includes North-Central Texas, Kansas, Oklahoma.
†Beginning February, 1923, Somerset, Mirando, Rockdale and Luling production included.
NOTE—Mexia production included in North Central Texas.

Western Kentucky Development Hinging on Outcome of Two Tests Now Drilling

Louisville, Ky., Sept. 5.—Two wildcat wells now under way in Kentucky are attracting the attention of oil scouts and operators. The most important of the two is the well on the Williams farm, adjoining Boonsboro Beach, in the northern part of Madison County, and being drilled by J. N. Thompson and associates of Indianapolis. This well has set casing and is close around 350 feet in depth. It is looked upon as one of the favorable locations and may mean an extension of the Irvine field of Estill and Powell Counties, being upon practically the same fault. The owners expect to go to a depth of 1250 feet for the deeper pay sand, but may encounter something of value at a shallower depth.

The other wildcat test is that of the Canada Peak Oil Company on Canada Mountain just a short distance out of Middlesboro, in Bell County, and not far from Cumberland Gap. This well is being looked after by Charley Ross, one of the old-time drillers.

A general survey of the Kentucky field indicates that operations are on the decline, as the average oil man can see very little profit in Kentucky oil selling below $2 per barrel, owing to the cost of operations and the small production. Small producing wells in the Weir sand found in the Big Sandy Valley area are valuable, as such wells maintain their production for many years, and when once hooked to power plants, mean a steady income. During the week the Union Gas and Oil Company completed its No. 544 well on its 20,000 acres block of leases, in the North Weir field of Lawrence and Johnson Counties. Of this number 468 are oil producers, 7 dry holes and 69 gas wells, which is a record run of wells for one company in the Kentucky field and will remain a record for any field in the country for a long time to come.

Western Kentucky work is more quiet than at any time for a number of years. The best well for the week was a 30 barrel producer flush drilled by the American National Bank on the Mitchell lease, in the Scottsville field of Allen County.

The majority of the new wells for the week were located in the more Eastern division, in the Big Sandy Valley area. In Magoffin County, the Kentucky Counties Oil Company's late well on the Roark lease, is reported with a flush of 40 barrels, and J. H. Arnett's No. 11 on his own lease, at 20 barrels.

In the north part of Johnson and southwestern portion of Lawrence, the Union Gas and Oil Company brought in No. 9 D. W. Skaggs lease, and No. 8 M. E. Sparks lease, for 25 barrels flush each. In the same area, the Indian-Tex Petroleum Company's Nos. 3 and 4 W. L. Gilliam, show 20 barrels each. In Powell County, the same company's No. 14 Nancy Mays produced 40 barrels flush.

There is some talk of the large gas companies of the East invading the territory along the east side and southeastern portion of Kentucky for a hunt for natural gas. Some of these counties are known to contain large supplies of the natural product and the fact that other fields are on the wane means that newer and virgin fields must be discovered and Eastern Kentucky is the one best bet at this time.

Los Angeles, Calif., Aug. 30.—Sometimes the way of the oil purchasing concern is hard. This story is without names. Recently a newcomer to California leased a town lot in the Torrance field. He drilled one well and the day it came in, he found himself dead broke and he owed some money. The well made 500 barrels the first day. That day the owner secured a loan from an oil purchasing company of $35,000 to be paid out of the production of the well. The well sanded up that night and since that time it has been impossible to bring the well back on production.

Imports of Petroleum at Principal United States Ports

The following represents the total imports of crude oil for the month with the current month given by weeks:

	Atlantic Ports						Gulf Coast Ports					
	Baltimore	Boston	New York	Philadephia	Others	Total	Galveston	N. Orleans Baton Rge.	Port Arthur Sabine Pass	Tampa	Total	Total at All Ports
April	370,000	669,000	1,074,000	625,000	591,000	3,319,000	1,615,000	1,020,000	1,135,000	168,000	4,362,500	7,681,500
May	344,000	515,000	1,026,000	437,000	615,000	2,937,000	1,351,000	910,000	1,184,000	127,000	3,582,000	6,519,000
June	314,000	421,000	1,791,000	755,000	809,000	4,090,000	1,515,000	1,142,000	1,062,000	229,000	3,948,000	8,038,000
July	287,000	465,000	1,806,000	448,000	898,000	3,876,000	1,471,000	1,120,000	833,000	92,000	3,516,000	7,392,000
September	268,000	565,000	1,744,000	660,000	686,000	3,923,000	1,776,000	1,397,000	880,000	224,000	4,277,000	8,202,000
October	365,000	292,000	1,194,000	536,000	816,000	3,203,000	988,000	1,330,000	380,000	50,000	2,248,000	5,951,000
November	223,000	395,000	1,194,000	576,000	757,000	3,145,000	1,478,000	1,000,000	551,000	111,000	3,287,000	5,432,000
December	474,000	574,000	1,243,000	606,000	1,024,000	3,917,000	2,019,000	1,832,000	933,000	259,000	5,043,000	8,960,000
January	398,000	531,000	1,060,000	376,000	949,000	3,314,000	1,295,000	887,000	689,000	15,000	2,936,000	6,250,000
February	520,000	527,000	639,000	458,000	771,000	2,865,000	1,558,000	1,284,000	525,000	195,000	3,562,000	6,427,000
March	802,000	734,000	1,243,000	502,000	1,668,000	5,049,000	2,346,000	1,689,000	1,116,000	301,000	5,257,000	10,281,000
April	653,000	664,000	1,371,000	407,000	1,067,000	4,162,000	1,641,000	1,492,000	510,000	68,000	3,711,000	7,873,000
May	693,000	618,000	1,368,000	264,000	1,329,000	4,272,000	1,398,000	1,308,000	884,000	169,000	3,759,000	8,031,000
June	515,000	466,000	1,864,000	292,000	1,026,000	4,163,000	1,769,000	1,079,000	685,000	145,000	3,678,000	7,841,000
July	375,000	260,000	1,971,000	179,000	1,114,000	3,899,000	1,418,000	1,211,000	579,000	153,000	3,361,000	7,260,000
August 2	88,000	70,000	530,000	.....	341,000	1,029,000	359,000	248,000	64,000	15,000	686,000	1,715,000
August 9	.....	129,000	110,000	221,000	121,000	581,000	270,000	245,000	181,000	.....	696,000	1,277,000
August 16	85,000	.....	310,000	63,000	50,000	508,000	313,000	212,000	50,000	.....	575,000	1,083,000
August 23	125,000	.....	311,000	45,000	470,000	951,000	512,000	383,000	54,000	45,000	994,000	1,945,000

NOTE—Figures by American Petroleum Institute.

Receipts of California Oil at Atlantic Coast Ports

The following shows the receipts of California oil at Atlantic Coast ports by months with the current month given by weeks:

	Atlantic Ports						Gulf Coast Ports					
	Baltimore	Boston	New York	Philadephia	Others	Total	Galveston	N. Orleans Baton Rge.	Port Arthur Sabine Pass	Tampa	Total	Total at All Ports
March	442,000	184,000	1,355,000	496,000	615,000	2,691,000	.....	.....	.....	.....	.....	2,691,000
April	105,000	256,000	2,456,000	502,000	320,000	3,639,000	.....	478,000	.....	.....	478,000	4,117,000
May	444,000	72,000	1,259,000	764,000	964,000	3,553,000	.....	300,000	53,000	.....	353,000	3,906,000
June	821,000	160,000	3,206,000	826,000	808,000	5,821,000	.....	664,000	.....	.....	664,000	6,485,000
July	443,000	75,000	2,068,000	741,000	699,000	4,080,000	.....	559,000	.....	.....	559,000	4,639,000
August	329,000	229,000	2,956,000	836,000	683,000	5,033,000	.....	970,000	70,000	.....	1,040,000	6,073,000
September	1,028,000	237,000	2,581,000	621,000	443,000	4,910,000	.....	703,000	.....	.....	703,000	5,613,000
October	779,000	224,000	2,503,000	779,000	429,000	4,714,000	.....	746,000	.....	.....	746,000	5,460,000
November	591,000	155,000	2,302,000	584,000	271,000	3,903,000	.....	935,000	.....	.....	935,000	4,838,000
December	454,000	215,000	2,901,000	813,000	753,000	5,136,000	.....	729,000	.....	.....	729,000	5,213,000
January	619,000	77,000	3,156,000	659,000	503,000	4,660,000	.....	615,000	.....	.....	615,000	5,275,000
February	326,000	145,000	2,811,000	842,000	75,000	4,199,000	.....	810,000	.....	.....	810,000	5,009,000
March	298,000	77,000	3,352,000	989,000	413,000	5,129,000	.....	.....	.....	.....	.....	5,129,000
April	170,000	77,000	2,633,000	378,000	224,000	3,482,000	.....	.....	.....	.....	.....	3,482,000
May	190,000	147,000	2,771,000	411,000	273,000	3,792,000	.....	315,000	.....	.....	315,000	4,107,000
June	522,000	147,000	2,490,000	443,000	220,000	3,822,000	.....	.....	.....	.....	.....	3,822,000
July	167,000	70,000	2,017,000	374,000	188,000	2,816,000	.....	75,000	.....	.....	75,000	2,891,000
August 2	.....	.....	603,000	.....	.....	603,000	.....	.....	.....	.....	.....	603,000
August 9	108,000	.....	842,000	58,000	.....	1,008,000	.....	30,000	.....	.....	30,000	1,038,000
August 16	77,000	.....	445,000	105,000	75,000	702,000	.....	.....	.....	.....	.....	702,000
August 23	230,000	76,000	702,000	75,000	.....	1,083,000	.....	.....	.....	.....	.....	1,083,000

Note—Figures by American Petroleum Institute.

Getting Ready for More Tests in Canadian Field

Calgary, Alta., Aug. 31.—The latest official report from Geologist Newton W. Emmons of British Petroleums, Ltd., fails to confirm the previous reports of a proven commercial production in No. 3 well, in the Irma-Wainwright field, east central Alberta. The possibility of a 500 barrel well is, however indicated by the drilling already done; but the well remains to be drilled in. Casing has been cemented at 2050 feet and the drillers are waiting for 2500 feet of 3-inch drill stem, when the well is to be drilled in and its definite production established. It is reported that British Petroleum's No. 4 has reached the same sand at practically the same depth.

There seems to be considerable difference of opinion as to the value of the Irma-Wainwright oil. It is described as a heavy asphaltic oil, similar to Mexican crude; and while there is optimistic talk of results that can be secured by intensive distillation and new cracking processes, a conservative analysis by Prof. Fowler of the University of Edinburgh shows the following results: Gasoline, 6.2 per cent; kerosene, 21.5 per cent; lubricants, 66.3 per cent; asphaltic residue, 6 per cent. This is analysis, however, of crude from a previous well, and the oil from No. 3 which is apparently in part from a different sand may show up better.

Meanwhile, British Petroleums, Ltd., is planning to go ahead with a systematic development of production in the sands already encountered. Two more tests will be located, and will spud in as soon as Nos. 3 and 4 have been finished and the rotary outfits moved to the new sites. Definite production tests of both No. 3 and 4 should be finished within a couple of weeks. The company plans to continue drilling two tests simultaneously till the end of the season, but later will test the deeper horizons.

Maple Leaf Oil Company No. 1 gasser, section 24-45-8w4 is waiting for casing before drilling into the sand. Wainwright Oil Producers Syndicate, section 36-44-7w4, after delays due to water scarcity, has deepened its water well and is again drilling steadily. British interests are reported to have secured an option on this company's plant and leases. Western Consolidated Oils, Ltd., section 20-45-6w4 is making hole slowly, but is almost ready to set the first casing.

The reported strike at British Petroleums' No. 3 has stimulated a number of other companies to a show of activity. Irma Oil Development Company, section 28-45-9w4, is reported getting its plant in shape to resume drilling on the test spudded in last fall. Crown Oil Company of Edmonton is locating two tests, one in the Buffalo Coulee district, and another south of Baxter Lake. British Wainwright Oil Company is unloading drilling equipment and casing at Wainwright, for a new test.

In the far north, Imperial Oil, Ltd., is drilling its new Fort Norman test about 150 feet from the discovery well. The drilling outfit and casing from the duster at C camp were transported across the river for the new well, which on August 9 after about a month's work rigging up and drilling had reached 130 feet depth. The discovery well is reported to maintain its normal production, around 755 barrels a day, when opened up.

In southern Alberta, Canadian Oil and Refining Company No. 1 (Rogers-Imperial) section 29-1-11w4, in Sweetgrass district, is drilling below the gas sand at 2625 feet and having some trouble with caving. Imperial Oil, Ltd., is reported practically ready to spud in its test in this area. In Many Island Lake district, Community Oil Wells, Ltd., section 19-14-1w4 has pulled casing and is being bailed out, after which the gas will be mudded off and the hole deepened for oil.

In Ontario, the Glenwood Natural Gas Company deep producer on the Hugh Shanks farm Romney township, Kent County, is giving rather unsatisfactory results on the pump. It started at between 25 and 30 barrels a day but is reported to have fallen off considerably, and developed quite a bit of water with the oil. To the east, Union Natural Gas Company No. 251, J. Shanks farm, near Port Alma, got the Trenton limestone at 2749 feet and is now reported drilling below 2920 feet. The Trenton here is higher than in the Union-Truckenbrod duster, a little east, where it was 2833 feet, and lower than the Glenwood-Shanks producer further west, which got the Trenton at 2712 feet. In Essex County, the Southern Ontario Gas Company test near Colchester is a couple of hundred feet in the Trenton, with a small show of oil, but no commercial production.

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Tonkawa Deep Wells Still On Rampage

Daily average output of Oklahoma jumps to 540,000 barrels as new wells add to flush

By W. Lee Sloan

Tulsa, Okla., Sept. 2.—The deep sand wells in the Tonkawa field are again responsible for an increase in the daily average production of Oklahoma which is now estimated to be slightly in excess of 540,000 barrels per day, the highest figure ever attained for daily recovery of crude oil in the state.

With two new wells added during the past week, the deep sand wells now have a combined daily output of 68,600 barrels. The Pennock Oil Company added one well to the total as likewise did the Gypsy Oil Company. This now brings the total up to 17 wells producing from this deep horizon with 46 wells drilling with that sand as their objective.

Taking the maximum production of each well during the month of August, the total maximum output in any 24-hour period would be 79,165 barrels of oil, an amount larger than the entire daily production of the Burbank field with 1354 wells producing. These 17 producing wells are producing many times more than all the wells in the state of Pennsylvania.

The latest report of the per day performance of each well in this deep sand is as follows:

Comar Oil Co., 1-W Beverlin	5,769 bbls.
Comar Oil Co., 4 Pettit	2,501 bbls.
Comar Oil Co., 1-W E. Endicott	4,890 bbls.
Comar Oil Co., 5-W E. Endicott	4,154 bbls.
Comar Oil Co., 1-W L. Endicott	4,878 bbls.
Wentz Oil Corp., 45 McKee	10,265 bbls.
Pennock Oil Co., 1-D Endicott	2,500 bbls.
Pennock Oil Co., 4-D Endicott	2,300 bbls.
Pennock Oil Co., 5-D Endicott	2,700 bbls.
Pennock Oil Co., 7-D Endicott	3,000 bbls.
Gypsy Oil Co., 81 Shawver	3,200 bbls.
Gypsy Oil Co., 83 Shawver	6,000 bbls.
Gypsy Oil Co., 84 Shawver	3,000 bbls.
Gypsy Oil Co., 85 Shawver	5,088 bbls.
Blackwell O.& G. Co., 1-C McDaniels	5,892 bbls.
T. B. Slick, 1-E L. Endicott	2,600 bbls.
T. B. Slick, 5-E L. Endicott	3,115 bbls.

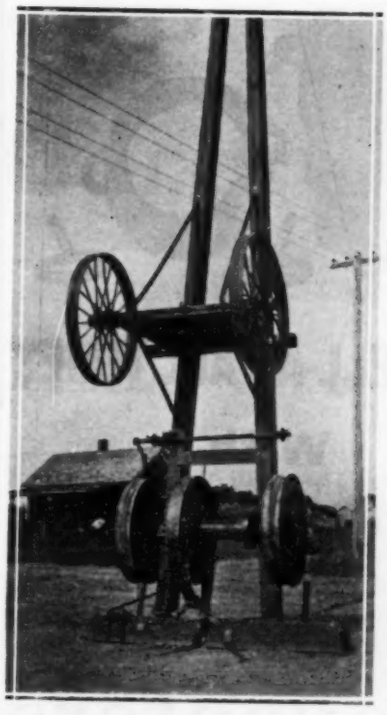
The sixteenth well for the deep sand was the Pennock Oil Company's No. 5-D Endicott, in the center of the northwest of the southwest of the southeast of section 34-25-1 west, Kay county. The deepest producing horizon of the field was found in this well when it hit the pay at 4210 feet. First oil was reported at 4215 feet and at 4218 feet it flowed 1625 barrels during the first 13½ hours. After this period, the well started producing 135 barrels per hour.

The Gypsy Oil Company's No. 85 Shawver in the southwest corner of the northwest of the northwest of section 2-24-1 west topped the Slick sand at 4142 feet and after drilling in, it started flowing at the rate of 5088 barrels per day.

The Wentz Oil Corporation's No. 45 McKee, largest of the 17 producers, started increasing its flow eight days ago and on August 28 the total production for the day was recorded as 10,475 barrels. The well was formerly producing approximately 8000 barrels per day.

A decrease of 1,689 barrels in the daily average production of the Cromwell field was recorded for the past week, the total being 60,348 barrels from 83 wells. Pipe line movements also decreased to 79,028 barrels as compared with 82,654 barrels for the same day last week. The Prairie Pipe Line Company is running the largest amount of the Cromwell oil, a total of 15,232 barrels daily while the Magnolia is second with 14,389 barrels. Gulf Pipe Line Company is taking 9,992 barrels from the Gypsy Oil Company wells while Sinclair shows a daily pipe line run of 8,997 barrels. Total oil run to storage for this day was 5,722 barrels, while 518 barrels were taken into tank cars at the loading rack for the Lubrite Oil and Refining Company at St. Louis.

After deepening the Central National Oil Company's No. 1 Dunn, the one-mile extensioner of the Cromwell field, the production was boosted to 105 bar-



The accompanying picture illustrates the Dewey Friction Wheels, manufactured and sold by the Dewey Friction Wheels Company of Bartlesville, Oklahoma.

As illustrated the attachment fits on to an ordinary A mast pulling machine, or any other make of pulling machine and it is used for pulling the rods and tubing from any depth well where a pulling machine can be used. Power is derived from the rear wheels by raising the rear tires against the Friction Drums, by means of a hoisting shaft and friction lever, the operator furnishing the truck with gas by using a throttle rod operated by the brake lever.

By using these Friction Wheels the producer can do away with the use of a team, thus saving teaming expenses. He can also cut labor expenses as the machine is much faster and entirely safe. These machines have been in operation for more than a year and they have met the approval of every oil field man who has seen them in operation.

For further information please write

The Dewey Friction Wheels Co.

P. O. Box 477

BARTLESVILLE, OKLA .

rels per hour. The well was deepened seven feet to a total depth of 3388 feet. The original gauge on the well showed it to be making 50 barrels per hour before deepening.

The Roxana Petroleum Corporation's No. 1 Culler, a wildcat well in the center of the northwest of the northeast of the northwest of section 12-8-8 in Seminole county, which is apparently destined to open up a new producing area for the county, came in so suddenly that it has cleaned the hole, throwing out the fishing tools and three joints of casing. The latest report from the well shows it to be making forty million cubic feet of gas and an estimated flow of 600 barrels of oil per day. The total depth of the well is now 3412 feet.

The Magnolia Petroleum Company's No. 3 Parker, in the southwest of the southeast of the northwest of section 32-8-8, Wewoka pool of Seminole county is making 842 barrels of oil after drilling five feet in the sand found at 3220 feet. This is the largest well to be completed in the vicinity of Wewoka for some time and interest has been stimulated in its completion.

Three new gas wells for the Otstot pool, northwest of Blackwell in Kay county have just been completed. The Blackwell Oil and Gas Company's No. 1 Geiger, southeast corner of the northeast of section 9-27-1 west found the sand at 3428 feet and after drilling to a total depth of 3435 feet, have forty-four million cubic feet of gas. This company has also shut in their No. 2 Crouch as a gasser making fifteen million cubic feet. The well, which is located in the southwest corner of section 10-27-1 west, found the sand at 2385 feet and drilled in three feet at which depth water broke through. After mudding off the water, it will be shut in as a gas well. The Harold Petroleum Company's No. 1 Chase, in the southeast corner of the southwest of section 4-27-1 west, has seventeen million cubic feet of gas in sand at 2385 to 2388 feet.

The Henry Oil Company has evidently opened up a new high gravity oil pool in central Okfuskee county with their No. 1 well in the southwest corner of the northeast of section 36-12-9, northwest of Okemah. The well has been making flows every four hours and at present is shut in until storage tanks can be erected. A higher show of oil was encountered in this well a week ago but the sand was drilled through until it reached the total depth of 3335 feet at which depth it started to flow oil of 45 gravity.

The Alcorn Oil Company has deepened its No. 1 McCullough in the southwest of section 12-26-2 west and the present production of the well is shown as 65 barrels per day, coming from a total depth of 3583 feet.

The C. J. Wrightsman wildcat well in section 1-21-5, Pawnee county, which came in last week swabbed 144 barrels oil and 100 barrels of oil from the latest report. T. B. Chandler of Tulsa, has found the Wilcox sand in his well in the northeast corner of the southwest of section 1-21-5 and with the sand barely touched it is making considerable oil but no estimate has been made. The sand in this new well was found at 3379 feet.

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Big Gasser Brought In By Jim Hogg Co. Wildcat

Laredo, Texas, Sept. 2.—When bailing out the heavy mud, that was placed in the hole to hold down the gas pressure, was in process Saturday afternoon, the Henne, Winch and Farris No. 2 test, located on block 3, survey 256, Jim Hogg county, blew is as a large gasser gauging 45,000,000 cubic feet of gas and spraying considerable oil

The well was allowed to blow for about fifteen hours and during that time the oil spray gradually increased until a heavy dark cloud, caused by the oil spray, hovered in and over the top of the derrick, the heavy wind laying a coat of oil on everything within a mile of the well and to the west.

After having removed the drill stem, the double and treble bands, crown block pulleys and everything from the derrick except the drill cable and bailer, the crew commenced bailing the well about three-thirty o'clock Saturday afternoon. Every precaution was taken by contractors Milo E. Trussel and E. R. Cezeaux in completing the well which threatened to blow out at all times after the plugs had been drilled out.

A two-length, four-inch bailer was used in bailing out about 500 feet of fluid out of the hole after which the fluid rose about 40 feet. Bailing was discontinued for a few minutes after which the bailer was again run which registered a rise of the fluid of more than 200 feet.

Wyoming Crude Not to Move to Oklahoma

If nothing else, flood of new oil in Mid-Continent will prevent competition any time soon

By Grady Triplett

Tulsa, Oklahoma, Sept. 1.—Instead of crude oil from the Rocky Mountain states coming into the Mid-Continent area to place a lasting price depression, there exists today a condition whereby the Mid-Continent fields by their mounting output, are holding back any onslaught from the Mountain section.

This situation presents an interesting reversal of opinions that were common only a year ago. With the begining of the Sinclair pipe line from Wyoming to the Mid-Continent area, it was accepted that the Mountain States oil soon would offer a competition that would be detrimental to the Mid-Continent area. It was argued that the first outlet for Mountain States oil would give that section opportunity to rise to a point in keeping with its possibilities as a source of crude oil.

Viewed from the angle or the Mountain States, crude oil from those fields would come into a position of equity with other fields of the United States. The Mountain States producer saw the prospect as one in which his crude would sell for a figure comparable with the Mid-Continent. He did not look on it as a thing of pulling Mid-Continent prices downward. Then pipe line outlet was considered as an offset to the proration that has existed for a long period in the Mountain States. with the purchasers taking only such oil as local storage and refining capacity would permit.

But the Sinclair pipe line has been completed since early last summer. A tariff has been granted and is in effect. Still not a barrel of Mountain States crude oil ever has reached the Mid-Continent area. Neither is there anything to indicate an early change in this condition. On the contrary, the mounting production of the Mid-Continent, while detrimental to its own price structure, seems bent on warding off any possible intrusion of oil from the Mountain States. There is no sound reason for transporting oil from Wyoming to put it in competition with other oils, already flooding a market. To do so would mean further drop in Mid-Continent prices. So instead of getting benefit of competition with Oklahoma oils, Wyoming crude would be forced to stand a pipe line charge and then meet a price that Mid-Continent producers consider too low for profit.

So the Mountain States, with a pipe line outlet, the only one they ever have had, are at this writing as isolated from the standpoint of crude oil distribution as they were a year ago. Storage continues to mount in Wyoming. Buyers protect themselves by proration, while the producer, having no outlet, must keep the output of his wells down to the quantity Mountain States refiners can use, plus what purchasers can store near the origin of the oil.

How long this situation will continue is problematical. Considering it from the point of Mid-Continent production, there is no immediate prospect of a change. Oklahoma production is on the upgrade, with 600,000 barrels daily an expected possibility. Other sections of the Mid-Continent offer no hope of receding as rapidly as Oklahoma should increase.

Then there is the seasonal element to the situation. Mid-Continent production is climbing at a time when refinery consumption is falling. The winter months undoubtedly will see the Mid-Continent price structure in a weakened condition, one that will offer little encouragement for oils from other states to meet it in competition, on either price or quantity.

The winter months in the Mountain States are a period of lowered field output. Well output is reduced from necessity, as consumption suffers in

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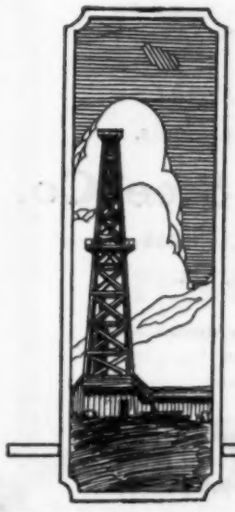

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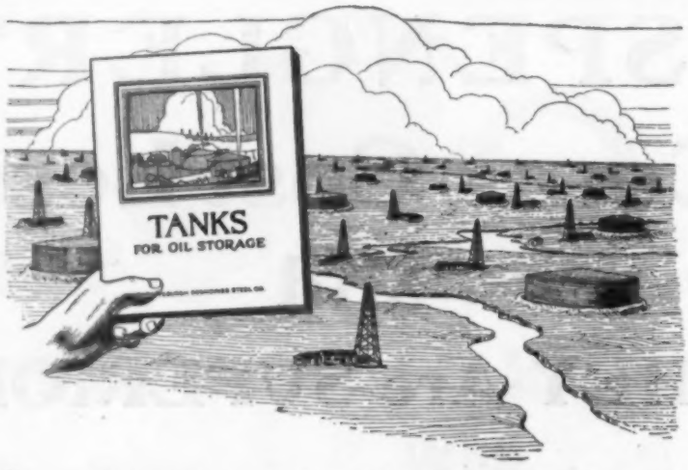
cold weather. For lack of outlet, producers have learned restriction.

Storage is another factor for consideration. So far buyers of the Mountain States have been able to store oil to take care of the excess above local refinery consumption. There are upwards of 30,000,000 barrels of oil in storage in the Mountain States area. While the amount of empty tankage is not publicly known, it is a fact that needs are not pressing.

So the fact that well output will be restricted for the winter and storage is available, contribute another reason for not transporting Mountain States crude oil into the already over-crowded Mid-Continent market.

That the present status of the two producing sections is likely to continue over a period is a conclusion to be drawn from conditions. There is no prospect of Mid-Continent production falling materially during the remaining four months of the year. During that period the fields of the Mountain States have facilities for caring for their own output.

With a pipe line ready for operation, it is sure to carry oil at some time. When it does, a readjustment of price structures of both the Mid-Continent and the Mountain States is probable. But the present condition of the Mid-Continent holding back the Mountain States surplus is evidence that the result of operating the pipe line may not bring the conditions as anticipated. Instead of Mid-Continent oils losing their stand as the determining factor in the market, they may continue that, and also continue to determine just when Mountain States oil shall come and in what quantities it shall come.



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Denies Any Deal On Reagan County Land

Dallas, Texas, September 1.—Denying that any company has held or now holds an option to purchase all or any part of the 48 square miles of leases owned by the Texon Oil and Land Company in and surrounding the Big Lake oil field in Reagan County section of West Texas, Frank T. Pickrell, vice president and general manager of the company, announced here Friday that his company had purchased steel derricks and awarded drilling contracts for six more tests to be the forerunner of a drilling campaign planned on a part of the immense leasehold. The Texon Company is open for negotiations with companies interested in building a pipe line outlet for the field as part of the consideration for checkerboard leases within the Texon block, but does not intend to sell a large number of solid sections to any single company, while the west halves of all the sections adjoining the 16-section block of the Big Lake Oil Company are withdrawn from the market.

According to Mr. Pickrell, who is actively in charge of the affairs of the Texon Company, representatives of virtually all the major companies in the Mid-Continent district have made overtures to him in recent weeks for the purchase of all or part of the Reagan County leases, and several of the major pipe line companies have worked up estimates on the cost of building a line into the field, which is the only promising source of flush production in Texas at present. The nearest pipe line to the Big Lake field is at Ranger—a distance of about 205 miles, while a direct line to the Gulf Coast would require fully 350 miles of pipe. While in New York last week Pickrell was in conference with a group of capitalists regarding the development of a part of the Texon leases, but no announcement has been made as to the outcome of this meeting.

The six new locations made last week by the Texon Company are to be located in the centers of the northwest and southwest quarters of sections 23, 26 and 36, all block 9. These locations are in the parts of the sections that have been set aside from the market by the Texon Company in order to protect the Big Lake Oil Company from an unnecessary number of offsets, as would be the case if some other concern should acquire leases adjoining the Big Lake Company's holdings on the east. The Texon Oil and Land Company owns a one-quarter interest in the Big Lake Oil Company. Lee C. Moore steel derricks are to be used on these new locations, as wooden derricks do not prove as satisfactory in the dry climate and high winds in West Texas. Since present production in the Big Lake field is now taxing facilities for shipping and storing oil, the Texon Company will not be able to complete these proposed tests until other crude arrangements can be made. In addition to these tests, the Big Lake Oil Company has announced that in all probabilities several more locations will be made shortly on its 16-section block, but will be shut down on the top of the pay until the output of their present wells decline to a much lower level.

Completions for Past Week in U. S. Fields

Summarized Review of Field Results

State—	Completions This Week	Completions Last Week	Producers This Week	Producers Last Week	Gas Wells This Week	Gas Wells Last Week	Failures This Week	Failures Last Week	Initial Production This Week	Initial Production Last Week
Oklahoma	83	64	58	42	7	3	18	19	20,646	37,715
Kansas	8	10	2	6	..	..	6	4	190	740
Texas	79	69	52	39	3	3	24	27	18,910	8,320
Arkansas	15	10	11	7	..	2	4	1	645	1,125
Louisiana	11	10	3	3	5	4	3	3	612	225
Eastern States	167	198	92	134	47	37	28	27	1,791	2,247
California	30	33	30	29	..	..	..	4	18,910	12,990
Totals	393	394	248	260	62	49	83	85	61,704	63,362

Note—Following is the explanation of abbreviations, signs, etc., used in completion and wildcat reports: *—dry hole, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million cubic feet of gas; abn—abandoned; bbls—barrels; b. s.—basic sediment; cas—casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in—inches; lcn—location; m—milling; N. S. E. W.—North, South, East, West; r—reaming; sd—shut down; sdtr—sidetracking; sp—spudded; sr—straight reaming; std—standardizing; sw—salt water; td—total depth; ur—under reaming; wo—workover; wosr—waiting on standard rig.

Texas

ARCHER COUNTY

Company, Well, Location—	Initial Production Bbls.	Depth
Atlantic Oil Producing Co. W. H. Taylor 1	*	1906
Boller et al Falls Co. School Land 1	*	1802
Holmes & Haskell Wilson 1	*	1436
G. H. Howell et al W. R. Brown 1	*	1600
Magnolia Petroleum Co. W. F. Parrish 2	20	1602
Robertson-Llewellyn 4	20	1407
Stanley McGregor et al J. H. Robertson 1-B	50	1406
W. E. Norton et al Pease-Graham 3	*	1705
Oil Investment Co. L. F. Wilson 1 (Blk. 114)	*	1708
C. Rosenfield et al W. F. Woodrum 1	*	1830
Shamrock Oil Co. J. T. Richardson 3-C	110	1310
Goldsmith 8	80	1334
Goldsmith 9	80	1341
The Texas Co. W. L. Andrews 1	140	1472
W. T. Willis et al J. L. Jackson 4	*	1820
Wilmut Farm Oil Co. H. Wilmut 7	40	1608

BURKBURNETT

Company, Well and Location	Initial Production Bbls.	Depth
Magnolia Pet. Co. J. H. Anderson 15	15	1830
Dyson-Serrien 6	10	1724

ELECTRA

Company, Well and Location	Initial Production Bbls.	Depth
Magnolia Petroleum Co. Rio Bravo 37	30	1772
Perkins & Cullom's Burnett Estate 7	460	1814
Texhoma & Perkins' Burnett Estate 1-B	250	1815
Ryan Pet. Co. G. E. Nance 23	100	1675
G. E. Nance 24	†	1460

YOUNG COUNTY

Company, Well, Location—	Initial Production Bbls.	Depth
McLain et al L. N. Durham 1	*	1250

EASTLAND-RANGER

Company, Well, Location—	Initial Production Bbls.	Depth
McBride et al White 1	25	2800
Re-Clamation Oil Co. Bond 2	85	3598

STEPHENS COUNTY

Company, Well, Location—	Initial Production Bbls.	Depth
Brown & Co. Hudspeth 1	*	3305
Sinclair Oil & Gas Co. Henderson 9	5	3195
Swensondale Oil Co. Houston 1	*	3410
The Texas Co. Black Bros. 20	5	3390

California

Torrance—		
Selby & Root's Peters 9	150	3808
C. C. M. Oil Co.'s No. 64	500	3706
Kettler 21	80	3856
No. 68	200	3715
No. 73	500	3662
Standard's Joughin 10	250	3802
Marble Fee 19	300	3750
Marble Fee 8	275	3722
Sentinel Joughin 6	275	3840
Dominguez 10	225	3860
Dominguez 9	275	3860
Pan American's Pate 1	200	3850
Pate 2	300	3854
DeWitt 1	150	3843
Andrews 1	225	3860
Superior Oil Co.'s Joughin 47	700	3840
Fullerton Oil Co.'s Cotton 1	1400	3668
Santa Fe Springs—		
General Pet.'s Santa Fe 17	40	4470
Dominguez—		
Union's Callender 6	2600	4339
Union's Hellman 6	2500	4251
Shell Co.'s Reyes 3-A	1000	4148
Childs 1 (wo)	2000	4223
Long Beach—		
Marine Oil Co.'s No. 17	3000	5046
United Oil Co.'s Haas 5	100	4019
Shell Co.'s Coseboom 4	375	4953
Alamitos 12 (wo)	725	4651
Elk Hills—		
Belridge Oil Co.'s No. 5, Sec 26-30-24	200	2917
Hovey Hills—		
Vivian B Oil Co.'s No. 1	200	1960
Sunset-Maricopa Flats—		
General Petroleum's L&A, Sec. 312	15	592
Coalinga—		
Coalinga-Mohawk Oil Co.'s 11, Sec. 12-20-15	150	4200

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FT. WORTH SHREVEPORT

Deeper Drilling Gets Oil In Former Gas Field

Shreveport, La., Sept. 1.—The outlook regarding the Cotton Valley field was changed overnight by the completion last Wednesday of an oil well in the Southeast Extension, where, formerly, only gas had been found. The policy of operators who have conducted the search for oil in the extension has been to drill each test more deeply into the sand than its predecessors. Six such wells were drilled without finding even a spray of oil, and operators had begun to despair of the future of the field, fearing that the oil producing area might be confined to the northern slope of the structure, where discovery occurred.

However, as suggested in recent issues of The OIL WEEKLY, continued deep drilling seems to have proven that the entire Cotton Valley structure may produce oil. The Invincible Oil Company's No. 1 Lindsey, located in the northeast corner of the northwest quarter of section 22-21-10, was drilled into 53 feet of broken hard and soft sand at a total depth of 2535 feet, or 18 feet below that of the deepest of surrounding gas wells, by sea-level comparison. When bailed in last Wednesday, it made a spray of oil similar to that of the older gas and oil wells in section 14, including the Invincible Oil Company's Merritt discovery well, which made upward of 500 barrels of oil per day when first completed and after a flow-box had been constructed to conserve its spray. The new well was shut in after it had cleaned itself. C. C. Hummer, drilling superintendent, under whose direction the well was finished, states that, when re-opened for a short time Tuesday, it flowed a solid six-inch stream of oil for three minutes, followed by a heavy spray, heavier, perhaps, than that of wells in the older section of the field. While flowing, it looked like a 15,000 barrel well. While spraying, it looked like it might make from 350 barrels, conservatively, to more than 500 barrels of oil per day. It is believed that, if pinched in through chokes, the well might even flow steadily. It has remained shut in, awaiting the completion of earthen storage, which may be finished today.

Hude and Aarnes's No. 2 Cox, located in the same section and only a quarter of a mile east of the above well, was bailed in Saturday afternoon as a dry gasser from 55 feet of hard and soft sand at a total depth of 2542 feet. The fact that this well was finished at a depth five feet shallower, below sea-level, than the Invincible's well, seems to prove that the latter's oil production comes from the bottom of the hole, and that its success is simply a matter of depth.

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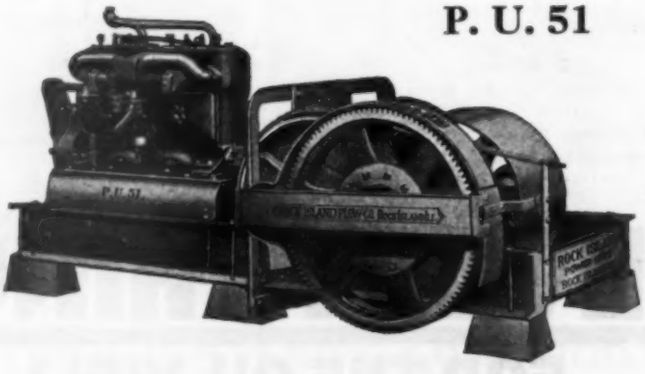

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Kansas

Company, Well, Location—	Initial Production Bbls.	Depth
Butler County—		
Martin & Gray No. 1, Blair, SEc NE 37-29-7	*	3346
Cowley County—		
Bryan & Stinson's No. 1, Dunn, NWc NE 18-32-3	*	3507
Southwestern Petroleum Co.'s No. 4 Eastman NEc NW NE 6-31-6	*	2893
Greenwood County—		
Transcontitnental Oil Co.'s No. 13 Olson, C NE SE 11-24-9	150	2272
Houston & Oklahoma Oil Co.'s No. 8 Sullivan, SWc NW NW 14-24-12	40	1760
Kingman County—		
Slick & Fleager No. 1, SWc 14-33-9w	*	3505
Montgomery County—		
Tidal et al's No. 1, NEc SE 17-35-14	*	2040
Russell County—		
Valerius Oil & Gas Co.'s No. 1 Phillips, SWc 3-13-13w	*	3810

Oklahoma

Burbank Field—		
Carter Oil Co.'s No. 15, C S L SW SE SW 16-26-6	540	2990
Carter County—		
Pat.y Oil Co.'s No. 8 Palmer, C SW SE SE 31-2s-2w	40	2570
Creek County—		
Hall et al's No. 1 Johnson, NEc SE SW 17-14-10	300	3393
Wilcox O. & G. Co.'s No. 7 Post, NEc SE NW 33-15-10	20	3153
Pulaski Oil Co.'s No. 2 Jack, NWc NE NW 7-14-7	520	4172
Transcontinental's No. 1, SWc SE SW 6-14-7	480	4170
Pure Oil Co.'s No. 14 Yarhola, SWc SE NW 17-15-8	250	3792
Devonian Oil Co.'s No. 3 Ralston, C N L NE SE SE 9-16-10	*	2847
Joemack Oil Co.'s No. 5 Childers, NEc NW SE 9-16-9	*	3503
Sartain Bros.' No. 2, SWc NW 32-17-8.	¶	2845
Olean Pet. Co.'s No. 5 Washington, SWc SE SW 32-17-8	100	3477
Garfield County—		
Sinclair O. & G. Co.'s No. 17, C S L SW NE 30-22-3w	30	2130
Crews Heir's No. 22 Crews, C S½ SW SE 19-22-3w	50	1360
Sinclair O. & G. Co.'s No. 14 Windler, NWc NE SE 25-22-4w	52	1953
No. 13 L. Windler, C E L NE SE 25-22-4w	50	1628

Company, Well and Location	Initial Production Bbls.	Depth
Grady County—		
Gant et al's No. 1, C SW NW 11-3n-5w	*	3020
Hughes County—		
Foster Inv. Co.'s No. 1, C SW SW NE 4-9-9	805	3329
Kingwood Oil Co.'s No. 5 Davis, C SW SW NE 3-9-9	360	3315
No. 1, SEc NE 12-7-9	*	3590
Champlin & Winkler's No. 2 Simon, C NE NE SW 4-9-9	*	3346
Kay County—		
Alcorn Oil Co.'s No. 1 McCullough, C N L SW 12-26-2w	300	3580
No. 1 North, NEc NW NE 12-26-2w	150	2513
Lincoln County—		
Willis et al's No. 2, lot 13, block 10, 12-14-6	500	4184
C. F. Noble's No. 1, lot 10, block 8, 12-14-6	550	4162
J. A. Hull's No. 7, NWc SW NW 12-14-6	762	4165
Amerada Pet. Co.'s No. 8 Lewis, C NE NE SW 12-14-6	450	4149
W. Phillips & Sinclair's No. 1 Brooks, SEc NE SE 2-14-6	*	4160
Union Pet. & Sup. Co.'s No. 2 Jackson, NEc SE SE 2-14-6	50	4160
Roxana Pet. Co.'s No. 6 Zollers, NWc SW SW 1-14-6	38	4140
Amerada & Wrightsman's No. 2 Welch, C S½ NE SW 1-14-6	114	4193
Logan County—		
Magnolia Pet. Co.'s No. 10 Main, C S L SW NW NW 34-19-4e	40	3784
Muskogee County—		
Frank Sollers' No. 1, SWc SE 8-14-19	*	835
Noble County—		
Ossenbeck's No. 1, SWc NE 14-24-2e	*	3702
Okfuskee County—		
Aztec Oil Co.'s No. 1 Robinson, SEc 35-12-11	*	1255
Iron Mt. Oil Co.'s No. 2 Hicks, SEc NW SW 4-13-8	*	3500
J. E. Wieble's No. 1, C W L NW NE 2-11-7	¶	2565
T. B. Slick's No. 1, C SW SW SE 35-11-9	1200	3332
Robinson et al's No. 1 Hill, SEc NW 25-11-9	¶	3204
Independent's No. 2 Nivens, NWc SE NW 28-12-10	*	3660
Blakely et al's No. 1 Johnson, C E L NE SE SE 28-12-10	¶	2922
Okmulgee County—		
King & Jackson's No. 4, SEc SW NW 2-13-12	*	2820
Pulaski Oil Co.'s No. 6 Bruner, SWc 36-12-13	¶	2168
Morton & Co.'s No. 1-A Tiger, SWc NW NE 7-12-12	306	2643
Southern States' No. 1 Grayson, C S L SE SW 6-12-12	13	2664
Gladys Belle Oil Co.'s No. 5 Mitchell, C W L SW NW 6-12-12	50	2548
E. Coline's No. 2 Tiger, NWc SW SE 4-12-12	10	1866
Frisco Oil Co.'s No. 2 Smith, C N L SE NW 25-13-12	20	2041
Josey Oil Co.'s No. 1 Dice, SWc 16-13-11	50	2636
Osage County—		
Sand Springs Home's No. 4, C S L SE 21-10-11	190	2429
Pierce et al's No. 1 Jackson, SWc NW NE 25-25-8	10	2464
Breene et al's No. 2, C SE SW 17-21-11	45	2446
Marland Oil Co.'s No. 14, C E L SE SE 20-23-8	50	2700
No. 1, SEc NE 20-23-8	35	2748
Grace Maxwells' No. 5, SWc NW SE 5-24-11	40	1726
New England's No. 10, C W½ SE SW 19-25-9	90	2260
Marland Oil Co.'s No. 2, C E L SE NE NE 33-25-8	100	2698
L. Friedman et al's No. 1, NWc SW 6-26-10	*	2006
Derby Oil Co.'s No. 11 Moss, C N½ NW 30-25-9	200	2501
A. G. Oliphant's No. 1, C E L SE NW NW 28-25-8	15	1093
City of Pawhuska's No. 9, C E L SW SW 26-26-8	¶	1250
Payne County—		
Magnolia Pet. Co.'s No. 10 Main, C S L SW NW NW 34-19-4e	20	3784
Carter Oil Co.'s No. 1 Meyers, NEc NW NE 18-18-5	*	3917
Pawnee County—		
T. E. Mann's No. 1 Van Eman, SEc NW NE 17-20-7	220	2624
Seminole County—		
Wilcox O. & G. Co.'s No. 2 P. Bruner, C SW SE SW 15-10-8	65	3435
Empire et al's No. 1, SWc SE SE 4-10-8	1426	3385
Magnolia Pet. Co.'s No. 3 Jones, C SW SE NW 32-8-8	842	3225
Roxana Pet. Co.'s No. 1, C NW NE NW 12-8-8	167	3406
Carter Oil Co.'s No. 2, C NE NE NE 16-10-8	503	3490
Waite Phillips' No. 1 Proctor, C NE NE SW 16-10-8	950	3430
Hoffer Oil Co.'s No. 4 Stidham, C SW SE NE 16-10-8	100	3560
Mid-Kansas O. & G. Co.'s No. 1 Alexander, C SE NW NW 15-10-8	800	3519
Roxana Pet. Co.'s No. 4 Brown, C SE NW SW 10-10-8	¶	3542
Pure Oil Co.'s No. 1 Bruner, C SE SE 9-10-8	1200	3497
Carter Oil Co.'s No. 3, C NW NE NE 16-10-8	980	3490
Cosden O. & G. Co.'s No. 1 Yarhola, C NW SW NE 22-10-8	*	3075

TRY ONE

STEWART SAFETY Sucker Rod Hooks are not among those things that a man must take a chance on. Any dealer in the United States will sell you one on approval.

Get one and try it. See how absolutely simple and fool proof it really is. No way for the load to slip out, no way for the hand of the operator to get caught, no chance of accident whatever.

If your supply store doesn't handle the Stewart Safety, tell him what a back number he really is and then write The Walter O'Bannon Co., Sole Distributors, 817 E. First St., Tulsa, Oklahoma.

GOOD PEOPLE TO DO BUSINESS WITH

Pelican Well Tool & Supply Co.

General Offices: Shreveport, La.

Company, Well and Location	Initial Production Bbls.	Depth
Carter Oil Co.'s No. 2 Hall, C NE NE NE 16-10-8	1163	3502
Amerada Pet. Co.'s No. 4 Brunet, C NE NW SE 16-10-8	1065	3572
Burke-Greis' No. 2 Brown, C NW SE SW 10-10-8	2170	3538
Stephens County—		
Roy Nash's No. 1 Horton, C N L NE 7-3s-5w	*	2500
Magnolia Pet. Co.'s No. 7 Stephens, C N L NW NW 33-1s-8w	*	2830
No. 20 Dillard, SWc SE NE 2-2s-5w	10	634
Midgett et al's No. 10 Dickerson, NWc SW NW 1-2s-5w	*	808
Tulsa County—		
Thompson & Black's No. 4, C S L SW NW SW 5-16-13	¶	1760

Louisiana

Company, Well and Location	Initial Production Bbls.	Depth
Caddo District—		
Dixie Oil Co.'s Robertshaw 14, 14-21-15	100	2887
Mutual Oil Co.'s Raines 10, 22-21-15	12	1626
Total, 2 wells	112	
Cotton Valley District—		
Hude & Aarnes's Cox 2, 22-21-10	¶15	2542
Invincible Oil Co.'s Lindsey 1, 22-21-10	*500	2535
Ohio Oil Co.'s Holloway 1, 23-21-10	¶25	2503
Total, 3 wells	¶40-500	

*Rough estimate; well open only 25 minutes.

OIL FIELD LUMBER

SPECIALIZING IN OIL OPERATORS NEEDS

96 Ft. AND 112 Ft. DERRICKS

STANDARD RIGS

FOR BOTH

ROTARY AND CABLE TOOL

Drilling

STEEL DERRICK FOUNDATIONS

TANK COVERS FOR STEEL AND EARTHEN STORAGE

ENGINE FOUNDATIONS

LARGE TIMBERS IN PINE, FIR AND OAK

Stocks in HOUSTON, GOOSE CREEK, WEST COLUMBIA and at SAWMILLS

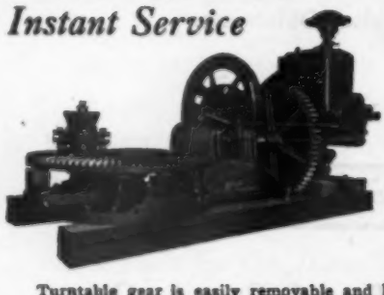
Special Quick Service in Texas and Oklahoma

Robertson-MacDonald Lumber Co.

General Offices: 215 Humble Building.

We will furnish on request Specifications, compiled by high grade experienced rig builders, of derricks, standard rigs and oil field woodwork construction in general use in the various producing fields.

Instant Service



More Power—Less Vibration

They Are Correct in Design

Husky Enough to Do the Job Right

The reliable eccentric motion does away with jerky lines.

Built in three sizes:

No. 4—Belt Drive, weight 6500 lbs. For deep wells.

No. 2—12 H. P. engine, weight 4600 lbs.

No. 1—6 or 8 H. P. engine, weight 3200 lbs.

Turntable gear is easily removable and having a broad face, coarse teeth and large diameter will stand up to the heaviest loads.

SHACKLE LINES SET LOW TO THE GROUND (13 in.) ELIMINATE EXCESSIVE STRAIN. QUICKLY INSTALLED.

Oil Field Supply Dept.

KANSAS CITY HAY PRESS COMPANY

Kansas City, Mo.

Company, Well and Location	Initial Production Bbls.	Depth
Bellevue District—		
Bliss & Weatherbee's Fee F-3, 23-19-11	*	355
Monroe Gas Field—		
Danciger Oil Co.'s Thompson 1, 16-20-3e, Morehouse Parish	¶5	2170
Palmer Corp.'s West Virginia 2, 3-18-5, Ouachita Parish	*	4095
Standard Carbon Co.'s Gayle 1, 18-19-5	¶10	2171
The Texas Co.'s Grayling B-1, 32-21-4	¶20	3150
Total, 4 wells	¶35	

Arkansas

Stephens Field, Ouachita County—		
Ohio Oil Co.'s Hall A-2, 31-15-19	10	2140
Smackover Field, Ouachita County—		
Atlantic Oil Prod. Co.'s Jeffus 4, 25-15-17	50	2320
Gilliland Oil Co.'s McRae 4, 30-15-16	40	2270
Smith 3, 36-15-17	40	2278
D. W. Green's Fee 1, 30-15-16	40	2287
Lyons et al's Patton 3, 32-15-16	35	2265
Magnolia Pet. Co.'s Smith 6, 31-15-16	100	2273
Owenwood Oil Corp.'s Snyder 4, 34-15-15	80	2070
Smackover Field, Union County—		
Arkansas Fuel Oil Co.'s Dumas 1, 29-16-15	*	2080
Bradley & Cazort's Miles 1, 21-17-15	*	2080
J. W. Clark's Alphin 2, 19-16-15	75	2126
Cross et al's Smith 3, 13-16-16	50	2088
Keene & Woolfe's Murphy 1, 9-16-15	*	2155
Leon et al's Berg 1, 4-16-15	*	1981
Sun Co.'s Smith 3, 1-16-17	60	2265
Total, 15 wells	645	

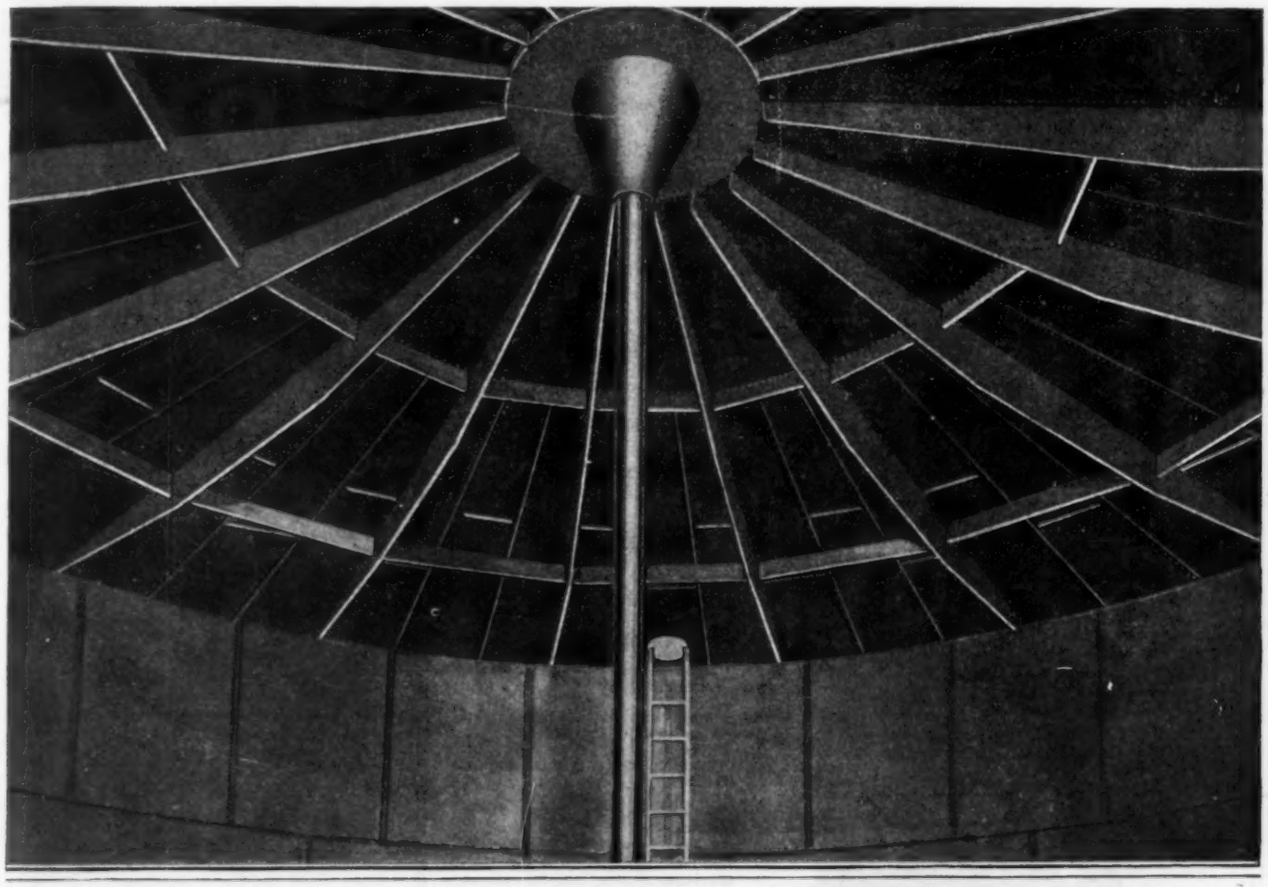
Eastern States

PENNSYLVANIA

Greene County—		
Jesse L. Garard, J. L. Garard 51	¶1½	....
Peoples Nat. Gas Co. Della Fox 1	¶1	....
Carnegie Nat. Gas Co. M. C. Cowell 2	*	....
Beaver County—		
Unknown Parties A. Keener 1	2	....
Tope & Co. E. C. Ray 1	*	....
Allegheny County—		
Mary Irwin & Co. Potomac Land Co. 4	*	....

WEST VIRGINIA

Kanawha County—		
Empire Pet. Co. Squire Jarrett Sr. 5	10	....
Owens Bottle Machine Co. Great Kanawha Land Co. 18	*	....
H. J. Quarrin 2	¶3½	....
United Fuel Gas Co. P. R. Rucker 1	¶5	....
C. W. Lepps 1	¶2½	....
J. A. Osborne 1	¶2	....
Poco Fork O. & G. Co. S. A. Fogarty 2	¶3½	....
Ohio Fuel Oil Co. Mary Scott 1	¶3	....
Boone County—		
Pure Oil Co. Williams Coal Co. 214	30	....
Williams Coal Co. 212	150	....
Williams Coal Co. 220	175	....
Owens Bottle Mach. Co. Cassueg-ham 1	¶3	....
G. A. Walker 1	¶	....
Boone County Poor Farm 1	¶2½	....
P. Chambers 1	¶2	....
Ritchie County—		
Cairo Oil Co. B. F. Prince 1	2	....
Hope Nat. Gas Co. N. J. Marshall 1	¶1	....
Carnegie Nat. Gas Co. Walter Sommerville 1	*	....
D. C. Reese & Co. W. Va. tract 29	5	....
F. Gillispie & Co. J. W. Dotson 1	¶2	....
Pittsburgh & West Va. Gas Co. L. Garrison 1	¶1½	....
Mellon Bros. A. J. Null 6	5	....
Calhoun County—		
Euclid O. & G. Co. Howard Lamb 1	¶2	....
Hope Nat. Gas Co. B. Johnson 1	¶3	....
Richter Oil Co. M. Smith 1	¶2½	....
M. F. Crowley Pette-Brown 1	¶1	....



Vapor Tight Decks On All Columbians

The first tests in vapor tighting oil field tanks were made with Columbian Bolted Steel Tanks.

Now, from the 65 to the 10,000 barrel sizes, Columbian Improved, Portable Bolted Steel Tanks are regularly equipped with decks of vapor tight construction. From bottom to deck they have the same factor of safety as standard 55's.

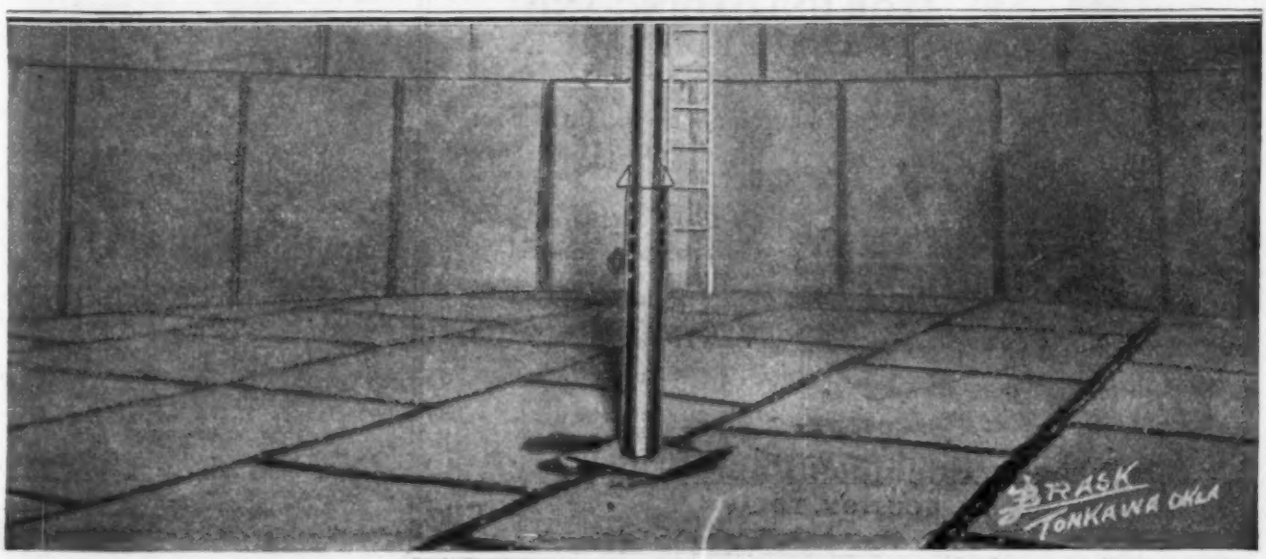
Here is a photograph of the inside of a Columbian ten-thousand. The deck proper is the improved lap joint style with a square box flange atop and an angle flange below each lap joint—standard on all Columbians.

Then, on all sizes from 2,500 to 10,000 barrel inclusive the double reinforced lap joint deck has the additional support of a steel substructure. From a circular steel plate in the center, truss plate girders radiate to the tank's wall. These bolted to the turned down flange of the deck's lap joints and are cross tied with *Z*-bar plates. A heavy steel pole at the center gives extra support. At its top is a large steel cone welded to the center plate of the deck. The steel pole is telescoped and may be lengthened with a pair of jack screws to give the deck the proper pitch.

Columbian Vapor Pressure Bolted Tanks (200 & 500 barrel) hold primacy among flow tanks. Built of 12 gauge throughout, with ample interior reinforcement and carrying as much as 2 lbs. pressure, they effect tremendous savings in retained gas and increased gravity.

In or near every active oil field there is a Columbian Dealer-Erector organization trained and maintained to serve your field and refinery storage needs. More than 40,000 Columbian Bolted Steel Tanks, in almost every oil region of the world stand in testimony of Columbian worth and service.

COLUMBIAN STEEL TANK COMPANY, Kansas City, Mo.
New York Tulsa Dallas Los Angeles San Francisco Casper



Company, Well, Location—	Initial Production Bbls.	Depth
Hope Nat. Gas Co. P. A. Bowine 1	115	....
Lincoln County—		
Moore & Rock O. & G. Co. J. Madden heirs 1	¶1	....
Ray O. & G. Co. L. Barrett 1	¶1	....
Foote O. & G. Co. W. J. Malone 1	¶1	....
Columbia G. & E. Co. J. F. Gross 1	5	....
Cambridge Gas Co. J. W. Pack 2	¶1	....
Ray & McComas Webb Adkins 1	¶1	....
Marshall County—		
Natural Gas Co. of W. Va. J. E. Black 1	¶1	....
Guy Patterson J. Clouston 2	¶1	....
[illegible] Gas & Heat Co. P. Murtaugh 2	¶3	....
M. Burley heirs 2	¶3	....
Middlebourne County—		
Clifton O. & G. Co. S. Smith 5	40	....

Company, Well and Location	Initial Production Bbls.	Depth
Carter Oil Co. S. W. Stout 54	*	....
Philadelphia Oil Co. T. J. Smith 4	50	....
Clay County—		
Thompson Oil Co. Thompson Land & Coal Co. 3	¶¼	....
Virginia Gasoline & Oil Co. Frank Cox 20	5	....
United Fuel Gas Co. D. Jardiff 1	6	....
Gilmer County—		
Hope Construction & Refining Co. G. C. Fisher 1	2	....
Hope Nat. Gas Co. W. V. Miller 1	¶2½	....
Bennett-Boggs 1	*	....
Roane County—		
Tawney O. & G. Co. S. L. Tawney 1	¶2	....
Carter Oil Co. Gothlin heirs 1	¶2	....
United Fuel Gas Co. W. Sergent 1	¶2	....

Company, Well, Location—	Initial Production Bbls.	Depth
Harrison County—		
Grasselli Chemical Co. M. R. Lodge 3	¶2	....
Aizpurin Oil Co. R. Stout heirs 3	¶2	....
Bridgeport O. & G. Co. S. S. Farris 1	¶2	....
Wetzel County—		
Cook Pet. Co. R. F. Huff 1	¶2	..
Carnegie Nat. Gas Co. S. Henderson 2	*	....
G. Robinson 23	*	....
Tyler County—		
Premier Oil Co. Wm. Birch 1	*	....
L. L. Gerrell U. G. Hestop 1	¶¼	....
Wood County—		
Hoaglin Oil Co. D. P. Green 1	10	....
Braxton County—		
Pittsburgh & West Va. Gas Co. R. E. Woodford 1	¶3	....
West Va. Central Gas Co. G. C. Gerwig 1	¶3	....
St. Albans Oil & Gas Co. G. C. Sutliff 1	¶2½	....
Monongalia County—		
South Penn Oil Co. M. Tennant 5	¶½	....
Marion County—		
Victor Oil Co. I. Coogle 2	¶2	....
Pleasants County—		
John Cop. E. C. Taggart 1	*	....
Upshur County—		
Pittsburgh & West Va. Gas Co. E. C. Young 1	*	2700

KENTUCKY

Company, Well, Location—	Initial Production Bbls.	Depth
Johnson-Magoffin Counties—		
Little Paint Oil Co. J. Lemasters 1	2	....
Magoffin Drilling Synd. John Salyer 1	10	....
Structure Oil Co. Manford Blanton 60 acres 11	8	....
Short Fork Oil Co. W. H. May 4	25	....
Cumberland Pet. Co. J. F. Conley 3	7	....
J. F. Conley 4	3	....
Bed Rock Oil Co. W. E. Patrick 2	10	....
W. H. Conley 28	5	....
Reno O. & G. Co. J. P. Conley 12	5	....
Petroleum Exploration Co. W. S. Adams 20 acres 4	5	....
Fields & Magee Eph Powers 5	10	....
J. B. McKenna Patton Borders 1	2	....
Atlantic Oil Prod. Co. Frank Conley 60 acres 14	5	....
Adams, Jenkins & Co. H. B. Adams 3	10	....
Kentucky Counties Oil Co. C. & E. Rorick 2	40	....
J. H. Arnett, J. H. Arnett 11	20	....
Lawrence-Johnson Counties—		
Mid South Oil Co. Carey Fannin 1	1	....
Price Oil Co. W. H. Ross 2	2	....
Fred Stone & Co. Ira Lester 3	10	831
Ira Lester 5	8	827
Mazie O. & G. Co. Brit Mazie 1	2	....
Union G. & O. Co. M. E. Sparks 8	25	813
D. W. Skaggs 9	25	817
Indian-Tex Pet. Co. Jesse Rose 2	10	815
Jesse Rose 4	10	813
Jesse Rose 5	10	817
W. L. Gilliam 3	20	831
W. L. Gilliam 4	20	816
W. L. Gilliam 5	15	814
W. L. Gilliam 6	12	820
Allen County—		
Neil-Huebring Oil Co. 9, 10	*	240
American Nat. Bank Co. R. Mitchell 19	30	244
Fulton Group of Companies N. C. Fisher 13	5	367
L. D. Robinson, Robinson 16	2	380
Barren County—		
Kopel & Co. Neeley 2	3	417
J. T. Esslinger Mann 2	7	587

TRADE MARK
KEYSTONE
REGISTERED U. S. PATENT OFFICE

Improved Deep Well Rig

EMBODIES THESE VALUABLE FEATURES

Friction Tool Hoist—Casing Reel—Indestructible Steel Sills—Keystone Patented Spudding Device—V-Friction Brakes, Patented—Babbitted Bearings throughout.

This machine is new—modern, complete, the product of an old and established concern. It is backed by 35 years of experience in the manufacture of portable drilling rigs and a world-wide reputation.

We are building three sizes: No. 27, for 2500 feet; No. 32, for 3000 feet; and No. 35, for 3500 feet depth.

Machines can be seen in various parts of the Kansas, Oklahoma and Pennsylvania fields. Let us wire you where to find one. BULLETIN 302 and prices on request.

KEYSTONE DRILLER CO.
BEAVER FALLS, PA.
Branch Office and Plant
Joplin, Mo.

Viking Twin Oil Pumping Units

FOR UNLOADING AND TRANSFER SERVICE

Figure—15

No. 2 Twin Outfit complete with 3 H. P. Gasoline Engine.

Capacity each pump 90 Gallons per minute.

Manufactured by
VIKING PUMP CO.
Cedar Falls, Iowa

Sold By
Southern Engine & Pump Company
HOUSTON, TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
Star Oil Co. Ritchie 6	12	545
Norris Bros. Scott 1	*	600
Wayne County—		
E. G. Hogue J. H. Duncan 11	3	....
Beaver Pet. Co. L. M. Morrow 8	2	....
Delen & Elam Levi Dobbs 1	*	....
Warren County—		
Joe Slate J. Schneider 3	6	368
Amfot Oil Corp. Zemp Bailey 3	5	....
Wolfe County—		
Federal Oil Corp. J. D. Spencer 4	*	....
Brenard & Adams Floyd Day 8	*	....
Powell County—		
Indian-Tex Pet. Co. Nancy Mays 14	40	....
Lee County—		
Superior Oil Corp. Schmidt 22	3	....
Estill County—		
Wood Oil Co. Floyd Rogers 26	2	....
Floyd County—		
New Domain O. & G. Co. A. P. Webb 5	*	....
Owensboro District—		
C. E. Daugherty W. T. Bickett 1	*	....

SOUTHEASTERN OHIO

Company, Well and Location	Initial Production Bbls.	Depth
Washington County—		
O. S. Reckard & Co. F. F. Dana 4	10	....
Pickens & Gale Ruth Uppole 11	2	....
Bachelor & Co. John Coughan 1	¶½	....
Henning Bros. W. Huntson 1	¶2	....
J. W. Rothley & Co. Coon Vensel 2	*	....
Cal V. Peavey & Co. Turner Oil 69	*	....
Noble County—		
E. E. King & Co. W. B. Warren 2	*	....
Casper Schott & Co. Mary Hupp 1	*	....
Muskingum County—		
Pure Oil Co. H. E. Baker 2	75	....
Coshocton County—		
Leonard O. & G. Co. Noah Asheroff 4	12	....
Monroe County—		
R. L. Timlin C. J. Bode 1	40	....

CENTRAL OHIO

Company, Well and Location	Initial Production Bbls.	Depth
Licking County—		
Wehrle Interests Susan Parr 1	3	....
A. H. Husey Co. S. V. Weakley 1	100	....
Carter Oil Co. F. Phillips 1	50	....
Detex O. & G. Co. O. E. Collerman 4	2	....
C. E. Saltzgaber, Son & Co. J. W. Motherstram 5	5	....
East Ohio Gas Co. E. Righter 1	*	....
Jones & Reece J. Montgomery 2	3	....
Knox County—		
Arkansas Fuel Co. L. Hardesty 1	7	....
Snyder & Carson W. P. Bebout 17	2	....
Ohio Fuel Supply Co. C. H. Davidson 3	3	....
Holmes County—		
Carter Oil Co. C. Waltman 1	15	....
Fairfield County—		
Clinton Oil & Gas Ed. Morrow 1	¶1½	....
Hocking County—		
Sunday Creek Coal Co. Fee 116	*	....
Perry County—		
Heisey Gas Co. Sam Hoover 1	¶¼	....

NORTHWESTERN OHIO

Company, Well and Location	Initial Production Bbls.	Depth
Wood County—		
Ohio Oil Co. Dan N. Easley 17	9	1335
Mose Lane 1	*	1555
F. J. Hendricks & Co. Fee 1	5	1407
E. C. Rockwood Fee 1	3	1332
Darke County—		
Cole O. & G. Co. W. C. Disher 12	4	1285
H. A. Martin J. Schoen 4	67	....
Auglaize County—		
Cliff, Blair & Co. M. Whitstone 2	10	1299
H. Hanold 2	30	1300
Ottawa County—		
G. Magsig & Co. W. E. Stuart 2	18	1295
Elmore O. & G. Co. A. Weis 4	11	1320
Van Wert County—		
Stetzer & McClure A. J. Haig 1	10	1239
Hancock County—		
Star & Clark I. Foltz 8	65	1315

ILLINOIS

Company, Well and Location	Initial Production Bbls.	Depth
Wabash County—		
Arkansas Fuel Oil Co. J. Payne 1	50	1560
D. Wright 9	40	1579
Clark County—		
Trenton Rock Oil Co. McClelland 6	30	1407
D. W. Watson & Co. R. C. Mehoit 2	2	693
Washington County—		
C. A. Stair Fisher-Veach 1	*	800
Wm. Bremer 1	*	804
Edgar County—		
L. C. Hood & Co. J. H. Sallee 1	2	600

INDIANA

Company, Well and Location	Initial Production Bbls.	Depth
Jay County—		
Rebecca M. Keith J. Hews 8	35	1040
Pike County—		
Nelson Bros. Gust Yaeger 7	*	1407

PRATT & CADY

1000 Pound Test Valves

P&C CO

Good metals, careful machining, inspecting and testing and the retaining ring construction make these valves particularly suited for the oil country.

P&C CO

SEE OUR EXHIBIT AT THE

INTERNATIONAL PETROLEUM EXPOSITION AND CONGRESS TULSA, OKLA. OCT. 2-11

READING STEEL CASTING COMPANY, Inc.

Pratt and Cady Division
BRIDGEPORT, CONNECTICUT

Stocked by: Norvell-Wilder Hardware Company, Beaumont, Houston, Mildred and Shreveport
Grinnell Co. of the Pacific, Los Angeles, Calif.

SEE OUR EXHIBIT AT THE

INTERNATIONAL PETROLEUM EXPOSITION AND CONGRESS TULSA, OKLA. OCT. 2-11

THE BAKER FLOAT COLLAR

Designed for the purpose of relieving the derrick and drilling equipment of excessive strains when handling long strings of casing and proportionately responsible for some of the world's records made in oil country work.

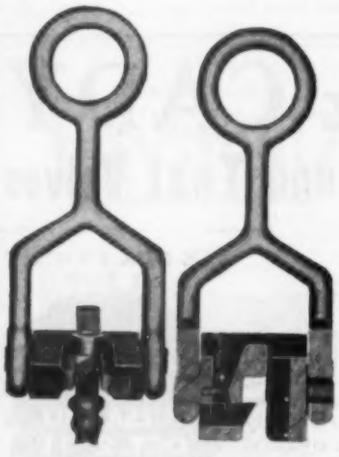
Baker Casing Shoe Company

Box 264-C Huntington Park Sta., Los Angeles, Calif.

PRODUCTION INCREASED

Time and oil saved is money saved.

Equip your lease with Cunningham Safety Sucker Rod Elevators and Miller Split Bell Nipples.



Cunningham Elevator catches all sizes of rods

"Cunningham Products are painted green."

Miller Split Bell Nipple Protects threads in Tee and keeps rods from hanging up

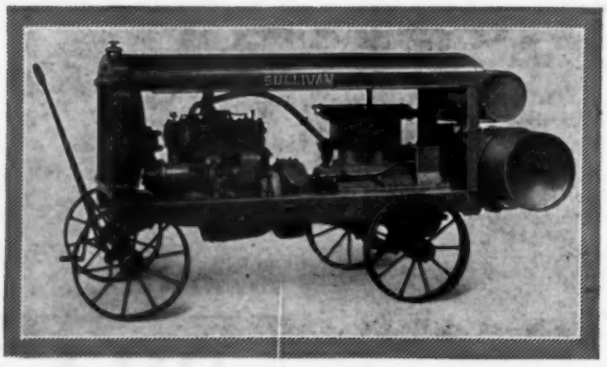
Sold at all supply stores

CUNNINGHAM CO.

212 S. Norfolk
Tulsa, Okla.

Phone Cedar 1727 — Night Phones Cedar 1411 and 1325 R.

AIR POWER ON WHEELS



A New Sullivan 103-Ft. Portable Compressor

This new Sullivan portable compressor meets the popular demand for a 100-ft. unit for many oil field jobs.

Try it for running Sullivan Rock Drills, for tank or building construction, concrete busting, operating portable hoists, sand blasting, paint spraying, etc. Its compactness and reliability will stand you in good stead. A larger, 170-ft. gas engine driven compressor is also built, as well as a 121-ft. unit, run from a Fordson.

Details of This Compressor

Type—WK-311.
Displacement—103 cu. ft.
H. P.—17.
Weight—3,435 lbs.
Drive—Buda 4 cyl. 4 cyc. engine.
Mountings—Steel wheel, trailer, or skid.
Ground area—9½ x 4½ ft.
New Bulletin 4277-N.

SULLIVAN MACHINERY COMPANY
122 So. Michigan Ave., Chicago.

WHEN QUALITY *is the Deciding Influence*

In the purchase of an extension lower valve that will deliver long and efficient service under exacting conditions the good dealer unhesitatingly endorses the HOUGH EXTENSION LOWER VALVE with **oversize** STEELEX Ball and Seat.

If you are not familiar with the many fine points of this product ask your dealer or read our advertisements in recent issues of this magazine—**it will pay you to investigate.**

The Charles N. Hough Manufacturing Co.
FRANKLIN, PENNSYLVANIA

Products that cut down your underground overhead.

Say you saw it in The Oil Weekly

Permits Granted and Locations for New Wells

(California—Kansas—Oklahoma—Texas—Arkansas—Louisiana)

TEXAS

Archer County—Shamrock Oil Co.'s N. D. Goldsmith 10, G. P. Diggs sur, 300 ft S No. 8; J. T. Richard on 4, I. L. Anderson sur, 366 ft N No. 3. Simms Oil Co.'s A. P. Nichols 4, Amer. Trib. sur, blk 30, 300 ft W No. 3; 3, 300 ft W No. 1. Murchison, Fain & Golding's N. D. Goldsmith 5, Anderson sur, blk 5, 260 ft to N and 150 ft to W line. C. H. Clark's J. T. Richardson 7, G. P. Diggs sur, 318 ft W No. 6. Ray Featherston Oil Co. Inc.'s A. P. Nichols A-3, Amer. Trib. sur, blk 30, 300 ft W No. 2. Melat & Graham's N. D. Goldsmith 1, G. P. Diggs sur, blk 6, 150 ft to N and W lines. Panhandle Ref. Co.'s A. Lewellyn 1, A. Lewellyn sur, 150 ft to S and W lines. Flowers Bros.' S. S. Hayter 1, TE&L No. 2436 sur, 150 ft to S and W lines. Kentucky Oil Corp.'s W. F. Parish C-1, H&TC Ry sur, sec 26, 150 ft to N and W lines.

Brown County—E. R. Wilson's R. L. Westerman 1, N. B. Mitchell No. 150 sur, South Central. R. F. Gilman et al's J. W. Newton 3, Wm. Miller sur, 1240 ft to N and 200 ft to E line; J. M. Moore 1, W. B. Smith sur, sec 155, 175 ft to S and W lines.

Bexar County—Hitchman & Howard's W. H. Brown 8, No. 294½ sur, 150 ft to W and 657 ft to S line.

Baylor County—Richardson Bros.' A. F. Boone 1, S. P. Ry. sur, sec 1, center; W. E. Wallace 1, Wallace-Scaling sur, blk 15, 450 ft to N and 809 ft to W line.

Callahan County—Goodloe & Harris' S. M. Davis 2, Bayland Asy. sur, sec 3, 150 ft to S and E lines. Sam McClure et al's T. G. Kile 1, TE&L No. 2280 sur, 150 ft to S and E lines. Geo. W. Nickel's S. M. Davis 1, Bayland Asy. sur, sec 8, 175 ft to N and 150 ft to E line. Grady Lyda et al's Mrs. A. S. Lobban 2, TE&L No. 2995 sur, 300 ft N No. 1. Junior Oil Co.'s W. M. Isenhour A-1, Bayland Asy. sur, sec 1, 2, SW corner. A. A. Hunter's H. Wagley 2, TE&L No. 2996 sur, 300 ft NW No. 1; 3, 400 ft W No. 1. W. J. House's A. H. Wagley 3, I&GN No. 391 sur, SE cor. E. L. Bradley's O. Wagley 7, TE&L No. 2996 sur, 150 ft to N and 650 ft to W line.

Carson County—American Ref. Co.'s S. B. Burnett 1, I&GN Ry sur, sec 113, 381 ft to S and E lines.

Caldwell County—United North & South Oil Co.'s W. J. Tiller 2, Jno. Henry sur, 1430 ft to S and 750 ft to E line; L. Byrd Est 5, 300 ft S No. 4; 6, 150 ft to N and 200 ft to E line; L. Byrd Fee 5, 400 ft W No. 1; Rios 11, 329 ft W No. 2; 12, 270 ft E No. 2; 13, 309 ft E No. 4; M. Moore 8, 160 ft to S and W lines; A. Mercer 9, Reaville & Caldwell sur, 493 ft SE No. 1; 10, 150 ft to W and 750 ft to S line; M. Mercer 9, Reaville & Dukes sur, 400 ft S No. 6.

Clay County—Nantz & Somer's Mrs. W. E. Parker 1, I. H. Crenshaw sur, blk 20, 160 ft to W and 460 ft to S line.

Guadalupe County—United North & South Oil Co.'s McKean Bros. 17, H. Cottle sur, 50 ft E No. 3; A. J. Baker 11, 350 ft NE No. 3; 20, 350 ft NW No. 4.

Galveston County—J. T. Finn's Mrs. F. E. Mundine 1, M. Dunman sur, center.

Gray County—C. R. Bock's C. W. Bradford 1, I&GN Ry sur, sec 24, 660 ft to N and 450 ft to E line.

Hardin County—D. L. Thibedeaux's W. H. Cavitt 1, H. G. King sur, 21 ft to E and 1 ft to S line. E. C. Hankamer & Co.'s (Sour Lake) Drown 1, S. Jackson sur, 15 ft to N and 80 ft to E line.

Harris County—J. M. Hester's Herman 70, J. B. Jones sur, 100 ft S No. 67.

Hunt County—Gulf Prod. Co.'s S. M. Cannon 1, R. Ragsdale sur, 150 ft to N and W lines.

Liberty County—Republic Prod. Co.'s Dolbear 91, J. Devore sur, 100 ft to N and 721 ft to W line. Monarch Oil & Ref. Co.'s A. Abel 10, J. Devore sur, 170 ft to N and 582 ft to W line.

Medina County—Associated Pet. Co.'s E. Woodward 1, T. Thomas No. 516 sur, 850 ft to N and 200 ft to W line. Kone & Willis' Fusselman & Murphy 1, Jno. Ward No. 18 sur, 150 ft to N and E lines.

Montague County—Texhoma Oil & Ref. Co.'s N. J. Howard 1, J. Chambliss sur, 160 ft to E and 1200 ft to S line.

McCulloch County—Fullagar & Priest's J. C. Priest 1, E. H. Damken sur, sec 1217, 450 ft to N and 152 ft to E line.

Milam County—Erie Investment Co., Ltd., of Texas' B. McClellan 9, A. F. Burchard sur, 450 ft to N and W lines.

Navarro County—Simms Oil Co.'s R. H. Boyd 5, J. D. Matthews sur, 300 ft W No. 4; C. A. Tucker's R. R. Davis 3, Jno. Choate sur, 246 ft W No. 2.

Orange County—Gulf Prod. Co.'s Kishi-Lang 8, Jas. Dyson sur, SE cor.

Panola County—The Texas Co.'s C. E. Lawless 1, J. L. Matthews sur, 625 ft to S and 350 ft to W line.

Palo Pinto County—Britton & Ritchie's Strawn Coal Co. 2, A. Ashworth sur, 990 ft to N and 330 ft to W line.

Shackelford County—J. M. Hickey's J. H. Owens 1, TE&L No. 3193 sur, 450 ft to W and 150 ft to S line. A. W. Johnston's J. W. Davis 1, TE&L No. 1558 sur, 200 ft to N and 400 ft to W line. Lamprakis Oil Co.'s F. W. Alexander 4, Insane Asy. sur, sec 15, 600 ft E No. 3.

Stephens County—Mid-Kansas Oil & Gas Co.'s H. Lee 3, T&P Ry. sur, sec 18 2090 ft to N and 500 ft to E line; M. L. Williams 2, T&P Ry sur, sec 15, 990 ft to S and 500 ft to E line. Hoffer Oil Corp.'s S. Webb 1, W. T. Malone sur, 250 ft to N and E lines.

Wichita County—R. T. Couch's J. W. Donohoo 10, Robertson sur, 150 to S and W lines. Cochran & May's E. E. Hardin 2, O. Farrish sur, 150 ft to N and W lines. Jack Borman's J. A. Fisher B-1, H&GN Ry sur, sec 15, 175 ft to N and W lines. Carter Pet. Co.'s J. A. Fisher 5, H&GN Ry sur, sec 15, no map. Gordon Oil Co. of Texas' S. B. Burnett 2, T&NO Ry sur, sec 1, 50 ft N No. 1. Ryan Pet. Corp.'s Geo. Nance 23, S. O. Fowler sur, 50 ft N No. 18; 24, 50 ft S No. 17. Underwood Drilling Co.'s Mrs. S. H. McCarty 4, S. O. Fowler sur, 150 ft to N and 324 ft to E line. Gulf Prod. Co.'s Forbess-Burnett 13, HT&B Ry sur, sec 7, 300 ft N No. 11. H. J. Peterson et al's F. M. Lawrence 1, Tarrant C. S. L. sur, sec 16, 750 ft to E and 150 ft to S line. Rubsam & Hunter's W. D. McClure 3, GC&SF Ry sur, 300 ft E No. 2.

Wilbarger County—Winnipeg Oil Co.'s Bond, Hawkins & Williams 1, H&TC Ry sur, sec 100, 150 ft to N and E lines. E. J. Goza's Harrold Pet. Co. 5, H&TC Ry sur, sec 25, 300 ft E No. 4; 6, 300 ft E No. 5.

Young County—Jas. I. Harvey's R. E. Hill, 1, TE&L No. 195 sur, 150 ft to N and E lines. R. J. Grant's A. C. Casey 1, TE&L No. 1906 sur, SW cor.

ARKANSAS

Hempstead County—Fullilove Drilling Co.'s Ford 1, 31-14-23, 200 ft N and W of SEc SW¼ SW¼.

Nevada County—Greeson et al's Lester & Mills Lumber Co. 1, 3-11-20, not checked.

OKLAHOMA

Carter County—Magnolia Petroleum Co., No. 5 Smith, C SW NW SW. 24-2s-3w

Coal County—Basic Pet. Co., No. 2, NEc SE SE SE 18-2n-9s.

Creek County—Pure Oil Co., No. 1 Stover, NWc NE SW 7-14-7,; Shaffer Oil & Refining Co., No. 2 Ross, NWc SW 13-19-8; Emery & Sons No. 6, SEc NW 2-14-8; Prairie Oil & Gas Co., No. 7, NEc SW 2-14-8; C. G. Tibbens No. 3, SEc NE NE 13-14-8; G. W. Davis No. 2, NEc SE SE 23-14-9; C. G. Tibbens No. 6, NEc SE 34-15-8; Carter Oil Co. No. 1, SWc NW NE 29-15-9; Tim Cushing No. 1A, C S½ NE 11-17-8; Madden & Madden No. 1, SWc 13-17-8; Kiokla No. 6, SWc NE SW 36-17-9; Wilson Whittier No. 1, C SW NE NE 11-17-10.

Hughes County—Independent Oil & Gas Co., No. 1 Alexander, C NW NW NE 2-9-9; T. B. Slick No. 1 Alexander, C NE NE NW 2-9-9; Tidal Osage Oil Co., No. 1 Coachman, NEc SW SW 4-9-11; Tidal Osage No. 3 Holt, SWc NW NE 9-9-11.

Kay County—Blackwell Oil & Gas Co., No. 3C Corrigan, NWc SE NE 34-25-1w; Carter Oil Co., No. 10 Goltry, SWc NW SW NW 35-25-1w; Comar Oil Co., No. 3W Endicott, C SE NE SW 35-25-1w; Comar No. 4W Ogg, C NW SW SE 35-25-1w; Comar No. 1 Harvel, SWc NE 21-29-1w; Comar No. 1 McCormick,

Weekly Comparison of New Wells

Following is a condensed table giving a comparison of permits or locations made for new wells in Kansas, Oklahoma, Arkansas, Louisiana, Texas and California:

Number of New Wells for Week Ending

	May 24	May 31	June 7	June 14	June 21	June 28	July 5	July 11	July 18	July 25	July 1	Aug. 8	Aug. 15	Aug. 22	Aug. 29
Kansas	61	27	18	...	...	17	9	8	12	13	..	9	12	16	10
Oklahoma	80	124	68	61	81	78	70	59	111	75	62	60	53	80	68
Arkansas	35	39	36	22	33	24	...	18	34	43	...	13	8	11	2
Louisiana	16	13	13	11	14	13	4	8	7	9	10	3	4	8	7
Texas	192	162	117	104	145	132	134	65	90	131	103	102	75	89	82
California	..	...	...	...	...	...	27	22	24	27	22	24	22	25	16
Totals	384	365	215	198	273	264	244	180	278	298	197	211	174	229	185

NWc SE 21-29-1w; Comar No. 1 Priboth, SEc NW 21-29-1w; White Eagle Oil & Refining Co., No. 1 Lemar, NWc SW 22-29-1w.

Muskogee County—Denton & Marshall No. 1 Ceasar, C N L S½ NW SE 7-15-18. Cumberland Oil Co., No. 1 Cumpton, C W L E½ NW NW 8-14-19; Volger Lightner No. 7, Seen C N L NE SW 19-14-16; Transcontinental Oil Co., No. 1 Fulson, NWc SE 12-13-15, (old well deepening).

Noble County—Comar Oil Co., No. 3W Gaume, NWc SW NW NE 2-24-1w; Gypsy No. 86 Clark, C SE NW NW 2-24-1w; No. 17, same farm, NEc SE NE NW 2-24-1w; No. 34, same farm, NEc SW NE NW 2-24-1w.

Okfuskee County—Hartman et al No. 3 Sears, NEc 5-11-11; Indian Territory Illuminating Oil Co. No. 1 J. Williams, C SW SE SE 34-10-9; Kingwood Oil Co., No. 1 Sand, SE SE SW 35-10-9.

Okmulgee County—Prairie Oil & Gas Co., No. 9 Jones, SEc SE NW 25-13-11; Misener et al No. 5 Colbert, NEc SW SW 16-14-14.

Osage County—Mutual Oil Co., No. 3, C N L NE 34-23-8; Adamson et al No. 5, C S L NE SW 32-21-8; Markham Breene No. 2, C E L NE 22-21-10; Barnsdall No. 26, NWc 31-21-12 (twin to another well); Donald Slingluff, NWc SE 4-23-10; Lewis Oil Co., No. 1, NEc SW NE NW 29-25-8; Carl Dresser No. 7, NWc NE NW SW 27-29-11.

Pawnee County—Westerly Oil Co., No. 1 Smith, SWc 22-20-6; Texas Co., No. 3 Ellis, NW¼ 27-20-6; Josey Oil Co., No. 1 Rhoads, NEc 28-20-6; Magnolia Pet. Co., No. 4 Miller, C NE NW NW 4-22-3.

Payne County—Josey Oil Co., No. 5, Laughlin farm, 35-19-5 (twin to Nos. 1 and 4).

Pontotoc County—Bryan Gillette No. 1 McClure, C SW SE NW 18-4n-6e; Texas Pacific Coal & Oil Co., No. 1 Hardin, SWc NE 31-4-6; Pilgrim Petroleum Co., No. 1 Perry, SWc 27-4-6; Boles Smith No. 1 Roy, C SW NW 34-5-6.

Seminole County—Gardner Petroleum Co., No. 1, C SW SW SW 30-8-8; Magnolia Petroleum Co., No. 3 J. Parker, SWc SE NW 32-8-8; Gypsy Oil Co. No. 1 J. Willis, C SE SE NE 8-10-8; No. 2, same farm, C NE SE NE 8-10-8; Tidal Osage Oil Co., No. 1 Baker, C SW NE NE 8-10-8; Amerada Petroleum Co., No. 2 Rogers, C SW SW NW 9-10-8; Carter Oil Co., No. 1 Starr, C SW SE NW 9-10-8; No. 2, same farm, C NE SW NW 9-10-8; No. 3, same farm, C NW SW NW 9-10-8; Gardener & Carter Companies No. 6 Bruner, C NW NE SW 9-10-8; Gypsy No. 5 J. Hale, C SW SE NE 9-10-8; Carter No. 3 Brown, C NW NE SW 10-10-8; Carter No. 3 Hill, C SE NW NW 10-10-8; Waite Phillips No. 2 Harjo, C NW NE NE 15-10-8.

CALIFORNIA

Torrance Field—Pet. Midway Co. Ltd.'s Crocker Com. 2, 5-4-14; Dawson 2, 8-4-14. Standard Oil Co.'s Quandt 1, 16-4-14. Fullerton Oil Co.'s Cotton 7, 16-4-14. Standard Oil Co.'s Joughin 15, 24-4-14.

Whittier Field—Associated Oil Co.'s Gregg A-1, 17-2-11.

Los Angeles Co. Field—Star Pet Co.'s Shoemake 1, 18-3-13.

San Bernardino County Field—Hesperia Oil & Gas Co.'s No. 1, 29-4-4.

Ventura Field—Shell Co.' Gosnell 8, 27-3-23.

Conejo Field—Nat King's No. 1, 34-2-20.

Sunset Field—General Pet. Corp.'s No. A-313 18-11-23, E. G. Lewis' No. 15, 17-11-23. Atlas Oil Co.'s No. 6, 30-12-23.

Midway Field—North American Oil Cons.' No. 11, 30-31-24. Calivada Oil Co.'s No. 2 34-32-24. Honolulu Consolidated Oil Co.'s No. 72, 4-32-24.

LOUISIANA

Acadia Parish— Mount Syndicate's Leckels No. 1, 42-9s-12w, 460 ft S and 460 ft W of NE cor of sec.

Bossier Parish—Humble Oil & Ref. Co.'s T. J. Taylor No. 2, 16-19n-11w, 150 ft south and 150 ft W of NE cor SW¼ of NE¼.

Claiborne Parish—El Dorado Chief Oil Co.'s McElwee No. 1, 13-22n-7w, 557 ft S and 498 ft E of NW cor NE¼ of SW¼.

La Salle Parish—Columbia Oil & Gas's Urania Lumber Co. No. 1, 22-10n-2e, 1020 ft E and 920 ft N of SW cor of sec.

Morehouse Parish—Oil Fields Exploration Co.'s Pratt No. 1, 35-20n-5e, 1980 ft E and 660 ft S of NW cor of sec.

Ouachita Parish—Southern Carbon Co.'s Fee No. 39, 29-19n-5e, exact center of section.

Union Parish—Natural Gas Producing Co. of La.'s Grayling No. 2, 8-21n-4e, 1320 ft N and 660 ft W of SE cor of sec.

KANSAS

Coffee County—Okla. P. & R. Co.'s No. 1 Pitcher, southeast corner of the northwest of 15-23-14.

Cowley County—Lew's Oil Co.'s No. 1 Robbins, center of the south line of the southwest of 31-30-6. Harvey Gordon's No. 1 Eastman, northeast corner of the southwest of the southeast of 6-31-6.

Ellis County—B. B. Faler et al's No. 1 Murphy, northwest corner of the southeast of 33-15-20w.

Greenwood County—Mission Oil Co.'s No. 1 Hull, northeast corner of the northwest of 34-23-10.

Montgomery County—Goldrick et al's No. 1 Long, southwest corner of the northeast 10-31-16. Red Bank Oil Co.'s No. 1 Love, southeast corner of the southwest of 28-32-14; No. 1, Haines, northwest of the northeast of 33-32-14. O. N. Tucker et al's No. 1, Norris, northwest corner of the southeast of the southeast of 32-32-14. Vanniman et al's No. 1, Mason, 15-33-14.

Dallas, Texas, September 1.—Orders for five 55,000 barrel storage tanks were placed by the Magnolia Petroleum Company recently, and two of the tanks are to be erected immediately on its fast growing tank farm in the Wewoka district, Oklahoma, making a total of fourteen 55's on this farm. The remaining three tanks are to be held in stock for the time being.

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—but the Devil's Steel Hand took care of it in short order —another remarkable record

Devil's Steel Hand

The other day, in underreaming their 8-inch, the Landreth Production Company, who are drilling a rank Wild Cat in Ford County, Texas, broke a new Wilson lug off at the shoulder. The lug went to the bottom.

Any contractor or driller will tell you that this particular kind of fishing job is about the worst there is. Harry Watson, who is Landreth's Field Superintendent, and who sticks mighty close to Ed. Landreth's Wild Cat jobs to keep the crews busy when the price of oil is low, knew from experience, however, the tools that he needed. He drove the 90 miles to Breckenridge and took a Devil's Steel Hand back with him.

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The surest way to change that terrible sensation that comes when a fishing job is necessary into the "grand and glorious feeling" that comes when the job is cleaned out is to see to it that a Devil's Steel Hand or Devil's Pitchfork is on the job. Immediate shipments—write for details.

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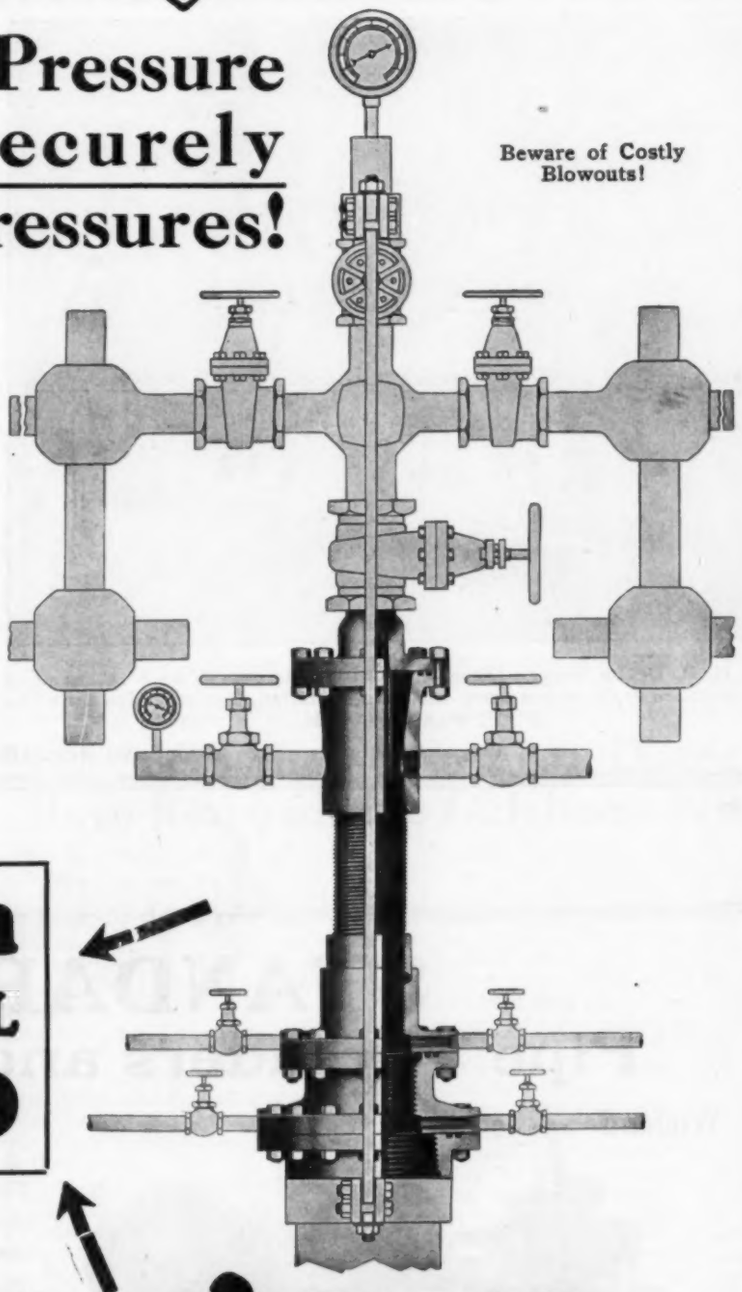

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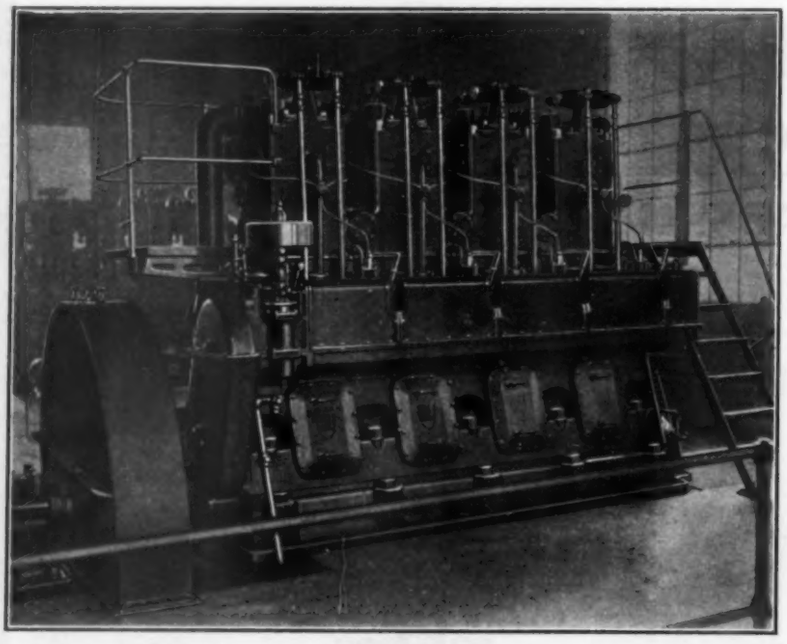

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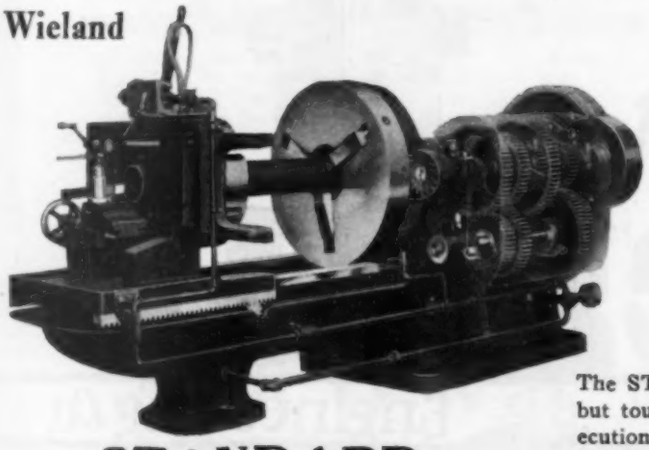

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WILDCATS FROM ALL SECTIONS

Test Well Shows Favorable Condition For Structure in Van Zandt County

Corsicana, Texas, September 1.—Van Zandt County section of the fault region in East Central Texas is again attracting the attention of wildcat operators as result of sub-surface formations running particularly high and favorable for a producing structure in a test now underway on the the J. T. Dunbar lease, F. Van Sickle survey in the north central part of the county. This test was spudded more than two years ago by the Porter and Holmes interests of Terrell, Texas, and was shut down for funds while drilling chalk at 2615 feet last February after logging the top of the Pecan Gap at 1510 feet and the top of the Austin chalk at 2354 feet, with a surface elevation of 472 feet. Frank Buttram, geologist of Oklahoma City, acquired an interest in the test several months ago along with a large block of nearby protection leases, and it is being deepened under the name of Free State Petroleum Company. The test is reported to have passed out of the Austin chalk formation last week at a depth of 2766 feet, and is now drilling in Eagle Ford shale below 2865 feet. The depth and thickness of the formations logged by this test so far are generally accepted as being favorable for a producing structure, and its progress has commanded the attention of scouts and lease buyers, although all the close in acreage is tied up.

The Boyd Oil Company did not make any headway during the past week on drilling in its third attempt for production on the East Bazette structure in the northeast part of Navarro County. This test is known as C. R. McCowan 2, Morris Webb survey, and encountered a flow of salt water in the Woodbine sand from 3217-24 feet. It is in shale formation at 3228 feet, and trying to lower a string of 5 3/16-inch casing to shut off the upper water. Officials of the company expect to find a gas sand at about 3228½ feet, based on sub-surface information furnished by its other two nearby tests, and are trying to get a water shut off before going into this lower sand.

Leasing activity in the fault region extending in a general northeast direction from the Corsicana-Powell field is almost at a standstill, but most of the major companies are now buying heavy along the fault zone extending in a general southwest direction from the Mexia district, with Milam County forming the center of their present lease operations. Magnolia Petroleum Company is one of the most active buyers, and is credited with having acquired approximately 18,000 acres in scattered leases recently in the southwest part of Milam County. Magnolia was taking a block centering around the Crump farm, James Stephens survey to drill a wildcat test, but the proposed location has been abandoned owing to the failure of one of the large land owners to accept Magnolia's price offer and lease terms. Most of Magnolia's Milam County leases are located from five to 10 miles from the town of Thorndale.

Lee Dodwell, a veteran wildcatter, and associates have acquired approximately 4000 acres in and surrounding the A. G. Berry and William Harris surveys, about two miles northwest of Branchville, and are reported to be lining up about 2000 acres more to drill a test. The Sinclair Oil and Gas Company has acquired a block of about 4000 acres located southwest of the Dodwell block and across the river in and surrounding the William Moore and McLearn surveys. The Pure Oil Company is also taking an active part in this Milam County lease campaign, and is purchasing acreage in and surrounding the J. A. Harmon and Hodges surveys, located about two miles southeast of Minerva.

Other major companies and independent operators are checkerboarding in and around the above large blocks and along the supposed trend of the fault zone in Milam County, and are paying prices ranging from $5 to $10 per acre. Among the companies taking this scattered acreage are Gulf Production Company, The Texas Company, Humble Oil and Refining Company, Marland Oil Company and the Roxana Petroleum Corporation.

Texas Company Gets Big Gasser at 668 Feet

Wichita Falls, Texas, September 1.—The Texas Company's semi-wildcat test on the Isaac Gist lease in the upper part of Montague County near the Red River is estimated to be good for more than fifty million cubic feet of dry gas from shallow sand at 668 feet. This test is located near the center of a 484 acre lease in the Wm. Donoho survey, and is known as No. 2-B. It was spudded in the middle of June,

Both Southern and Northern Districts Have Responded to Oklahoma Wildcats

Tul-a, Okla., Aug. 29.—Notwithstanding the fact that wildcat drilling in Oklahoma is at low ebb, those wells which have been drilled have counted to such an extent that the northern and southern parts of the state have fared alike in opening up new areas of production.

In Seminole County, the Roxana Petroleum Company has found a producing sand in their No. 1 Culler in section 12-8-8, a new pool uncovered which might open up a more prolific producing district than the Wewoka field farther south.

In Hughes County, T. B. Slick's No. 1 Sand, in section 35-10-9, found the Papoose sand at 3330 feet and his well made 19 barrels per hour for initial production. This well was a one mile extensioner to the Slick 600 barrel well in section 3-9-9, which in itself was an extension to the Papoose pool.

Three miles south of the Gilcrease-Papoose area, the Josey Oil Company found a 12,000,000 foot gas well in section 22-9-9 and opened up a potential producing pool.

In Lincoln County, Flynn and Morgan have reported a second good show of oil in their wildcat test in section 34-15-5 which has a probability of opening up a new producing pool to rival the Stroud pool in the same county.

In the northern part of the state, the wildcat development has been just as promising as the activity in the southern portion. The most recent annexation of wildcat wells being the C. J. Wrightsman No. 1 Hill in the northeast corner of the southwest of section 1-21-5 in Pawnee County. Although reports are prevalent that the well may not be much on account of the water found in an upper shale strata, the well was making about 300 barrels of oil from last reports. One scout has expressed the idea that a sand below the present productive one might be a better producing one. This well was a rank wildcat well and opens up a new producing area for the northern part of the state. Other wells drilling in the vicinity of this producer are: The Independent Oil and Gas Company No. 1 Schermerhorn in the southwest corner of section 26-21-4, Freeman et al's No. 1 Grain, southeast corner of the northeast of the southwest of section 8-21-7, Nixon and Flight's No. 1 Armstrong, northwest corner of the southwest of section 21-21-7, the Rex Oil Company No. 4 Martin, northwest corner of the southwest of the southeast of section 20-21-8, and J. B. Greene's No. 1 Havercamp in the northwest corner of the northeast of the southwest of section 31-21-7. The latter well has a showing of one and one-half million cubic feet of gas at 2432 feet but is now shut down until some definite disposition can be worked out.

The Alcorn Oil Company No. 1 North, in section 12-26-2, Kay County, opened up a new producing area not long ago and the second well, the McCullough No. 1, an offset, is making 100 barrels per day. The Marland Company of which the Alcorn is a subsidiary, is now making plans to lay a pipe line to this new field.

and set 20-inch casing at 202 feet to shut off salt water at 190 feet, while a string of 15½-inch casing was cemented at 643 feet. The top of the heavy gas pay was reported at 647 feet, and some difficulty is being experienced in keeping the gas production under control. Late last week preparations were being made to install a stronger gate valve as a precautionary measure. The Texas Company's first test on this lease was completed last November making 35,000,000 cubic feet of gas from broken sand at 740-856 feet.

A. T. Strong and associates have made contract to drill a deep test in the northern part of Montague County on the Ocie Cato estate, and have made a location 3,238.8 feet north and 1572 feet east of the southwest corner of the Cato 870 acre lease, Finess Robertson survey.

Shelton Oil Company's semi-wildcat test on the H. Boddy ranch in Clay County and west of Petrolia is showing good for about 25 barrels of pipe line oil from a sand at 1055-73 feet. This well is located in section 47, H. & T. B. Ry. survey, and south of the Big Wichita River. The production was found in a new sand for this section of the county.

Throckmorton County added another shallow gasser recently when Clark and others (was Whatley et al) C. P. Todd 1 was completed good for five million cubic feet of dry gas at 821-26 feet.

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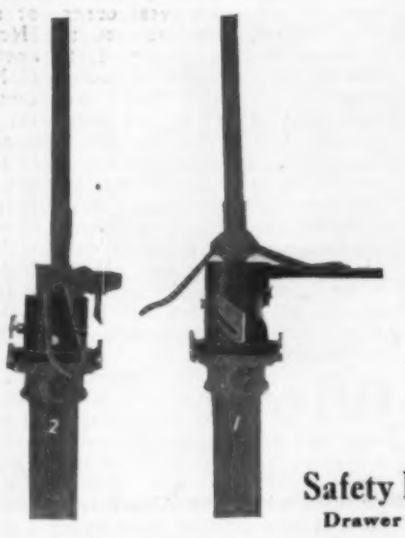

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Central West Texas Wildcats

COMPLETIONS

Company, Well and Location	Initial Production Bbls.	Depth
Brown County—		
Curry & Conway Bros.' Chambers 1	35	1296
Moore & Wilson's Westerman 1	10	1285
Callahan County—		
Pope-Wilson & Pennant's Webb-Albin 6	250	2493

DRILLING REPORT

BROWN COUNTY—M. T. Anderson-Moore et al's Wheeler 1, dr 2275 ft. Chas. S. Avery et al's Cox 3 sd for shot with show oil 2505 ft. Davis & Swartz's Newton 1, rig. Gillman et al's Newton 5, dr 720 ft. Honea et al's E. DeBusk 2, sd 1900 ft. Leonard et al's Prather 2, sd 2370 ft. Maher Bros.' Bohara 1, sd 2260 ft. McMurray et al's Newton 2, machine. O'Donnell et al's Chambers 1, rig. Omaha Southern Oil Co.'s G. B. Gaines 2, sd 1840 ft.

CALLAHAN COUNTY—Blair et al's Cathey 5, dr 720 ft. Tom Bryant et al's R. B. Forbes 1, sd 3100 ft. Bryon-Union Oil Co.'s Hennessey 1, sd 4045 ft. Chas. Dutton et al's Carter 1, sd 890 ft; Harwell 1, sd 800 ft; Cathey 5, timbers; Cathey 6 and 7, rigs. Dudley Oil & Gas Co.'s Hugh Moore 1, rerunning cas with packer, td 1841 ft. Hickey et al's E. L. Findley 2-A, rig. Junior Oil Co.'s A. L. Huntington 1, dr 1500 ft. Kellogg Drilling Co.'s Snyder 1, dr 1415 ft. McMath et al's Isenhower 1, spd and sd. Prewitt et al's Bailey 1, sd 1345 ft; Betcher 1, sd 1765 ft; Crane 1, dr 315 ft; White 1, dr 1200 ft; Windham 1, dr 800 ft. Shackelford et al's Chas. Allen 1, dr 1695 ft. The Texas Co.'s Isenhower 1, dr 1775 ft. Texas Pacific Coal & Oil Co.'s N. J. Biggerstaff 1, dr 3100 ft.

PALO PINTO COUNTY—Broderick & Calvert's H. L. Mosley 1, sd for water 305 ft. J. D. Cranford et al's L. Smith 1, spd and sd. Guaranty Royalty Co's H. L. Mosley 1, dr 2480 ft. McKinney et al's Marsden 1, sd 465 ft. S. W. Manning et al's R. Hitson 1, sd 3640 ft. Phillips et al's Stringer 1, dr 600 ft. Phillips & Graham's J. A. Caudill 1, sd 3800 ft. E. B. Ritchie & Ed. S. Britton's Strawn Coal Co. Fee 2, spudding. B. H. Talbert et al's Slimp 1, dr 605 ft.

SOMERVELL COUNTY—Glen Rose Oil & Gas Co.'s J. R. Buzan 1, located 4½ miles SW of Glen Rose, sd for cas 410 ft.

BORDEN COUNTY — Reeves-Parkhurst et al's A. J. Long 1, dr gray lime 2910 ft.

BREWSTER COUNTY—Arco Development Co.'s H. L. Kokernot 1, sd 3775 ft. Brewster Oil Co.'s W. H. Kokernot 1, fsh cas 2535 ft. Tesnus Oil Corp.'s (was Marathon Oil Co.) J. S. Cage 1, showing oil and gas, lowering 6¼ cas to shut off water 2555 ft. Portland Oil & Gas Co.'s State 1, sd 3050 ft. Nine Points Oil Co.'s Peralto et al 1, sd 1570 ft.

COKE COUNTY — Ace Oil Co.'s W. C. Locke 1, spd and sd. Sward & Laller's J. R. Mims 1, lcn. Mexia-Equitable Oil Co.'s W. J. H. Hodges 1, sd 2505 ft.

CONCHO COUNTY — Dome Production Co.'s Mrs. C. M. Hartgrove 1, co after shot in sand 1242-60 ft, td 1430 ft. Schultz Oil Co.'s Schultz 1, sd 3220 ft.

CRANE COUNTY—Texas Development Co.'s Jack Cowden 1, dr 1540 ft.

CROCKETT COUNTY — Crockett Drilling Synd.'s Robt. Massey 1, fsh tools 1640 ft; J. M. Shannon 2, lcn. World Co.'s L. P. Powell 1, fsh bit 845 ft. W. E. Ball et al's J. S. Todd 1, lcn.

CULBERSON COUNTY — David Flood et al's McAlpine et al 2, lcn. J. D. Wesner et al's Mack Sayles 1, sd 3105 ft.

DAWSON COUNTY — Lamesa Oil Co.'s John Burns 1, sd 2160 ft.

ECTOR COUNTY—Farmers Oil Co.'s Andy Newham 2, sd 1400 ft.

FISHER COUNTY—Pyron Oil Co.'s J. S. McCall 1, sd 3125 ft.

GARZA COUNTY—B. V. Blackwell et al's J. M. Boren 1, sd 1405 ft. Union Pet. Corp.'s C. C. Connell 1, sd 1625 ft.

GLASSCOCK COUNTY — Cushing Ranch

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Drilling Assn's W. H. Sparkman 1, sd 1950 ft. A. C. Varner et al's C. I. Brunson 1, dr 3425 ft. General Oil Co.'s L. S. McDowell 3, dr 720 ft.

HUDSPETH COUNTY—Boole Oil Assn's Gardner et al 1, sd 1540 ft. Wm. Loftus et al's Minnie Veal 1, sd 1300 ft. Hueco Basin Oil Co.'s University 1, sd 1560 ft.

HOWARD COUNTY—Big Springs Oil Co.'s Mable O. Quinn 1, sd 3640 ft.

IRION COUNTY—Orient Oil Co.'s J. D. Sugg 1, spudding with star machine.

JONES COUNTY—Anson Oil & Dev. Co.'s C. B. Brown 1, sd 1855 ft. C-H Oil & Dev. Co.'s J. A. Cullom 1, sd 3500 ft.

LOVING COUNTY—J. J. Wheat et al's N. E. Chapman 1, sd for water 400 ft. Ramsey Production Co.'s Russell 1, sd 4485 ft; Russell 2, sd 810 ft.

MITCHELL COUNTY—The California Co.'s E. Morrison (Lse. 5) 10, showing oil dr 2975 ft; Morrison 11, testing oil pay 3040 ft; W. H. Abrams (T&P) 6, setting 8¼ cas 2825 ft. Sloan Oil Co.'s H. C. Miller 2, sd 1265 ft. Chal. Daniel et al's W. D. Kynard 1, rig. M. E. Eddleman et al's A. C. Gist 1, sd 1980 ft. Morrison-Rowe Lease Synd.'s W. D. Kynard 1, sd for water 535 ft. Colorado-Texas Pet. Co.'s W. L. Foster 3, lcn. Horace Cook et al's W. L. Foster 1, lcn. I. B. Humphreys et al's P. C. Coleman 1, dr 1580 ft. J. T. Harris et al's W. C. Brown 1, te ting sand 363-70 ft. Tidal Oil Co.'s J. J. Handley 1, co after shot 3052 ft.

PECOS COUNTY—Arkansas Fuel Oil Co.'s Blackstone & Slaughter 1, materials. C. E. Menzie et al's Sherbino 1, lcn. Trans-Pecos Oil Co.'s H. L. Thomas 1, fsh tools and cas 1830 ft; W. W. Turney 1, sd 2904 ft; Bennett 1, sd 1245 ft; Johnson-Troy 1, sd 2965 ft. Southern States Lease & Prod. Co.'s J. M. Odem 1, sd 1205 ft.

PRESIDIO COUNTY — Tesnus Oil Corp.'s (was Claude Byler) Toole Estate 1, dr 900 ft.

REAGAN COUNTY — Big Lake Oil Co.'s University 12, (Sec. 36, Blk. 1) spudding. Texon Oil & Land Co.'s University 1, (Sec. 22, Blk. 9) top lime 2801 ft (s.l.m.) sd for 6⅝ cas 2821 ft. Wm. Dunning & Humble Oil & Ref. Co.'s Sawyer Cattle Co. 1, dr 2470 ft. Mid-Kansas & Transcontinental's McIntosch 1, sd hfw 3433 ft. University Oil Co.'s (was Sparks and Owens) University 1, (Sec. 17, Blk. 10) rigging up. Crockett Drilling Synd.'s University 1, (Sec. 9, Blk. 9) rigged up. Arkansas Fuel Oil Co.'s University 1, (Sec. 9, Blk. 6) fsh bit 400 ft. C. J. Wrightsman et al's Ingham 1, (Sec. 39, Blk. "C", L. & S. V. Ry Sur.) spd and sd. Orient Pet. Co.'s J. Belcher 1, lcn.

REEVES COUNTY — Dixieland Oil Co.'s Oates 2, sd 4505 ft. W. S. Troy et al's H. G. Hersheusen 1, sd 415 ft. Bell Reeves Oil Co.'s Findley et al 1, sd 1540 ft. El Paso-Sarago.a Oil Co.'s Geo. Wirt 1, sd 540 ft. Parker-Hancock Oil Co.'s Johnson 1, sd 1930 ft. Willoughby Pet. Co.'s W. D. Cowan 1, sd 610 ft. Rodenbaugh & O'Connell's W. D. Casey 1, sd 845 ft. Pecos Pet. Co.'s Johnson 1, sd 1930 ft. Texas Drilling Co.'s Pecos Valley 1, sd 1105 ft. Dome Drilling Synd.'s Ira J. Bell 1, lcn.

SCURRY COUNTY—Camp Springs Oil & Ref. Co.'s W. Y. Jones 1, sd 600 ft; J. O. Quinn 1, sd 3570 ft; L. E. Howell 1, lcn. Hermleigh Oil & Gas Co.'s J. W. Burris 1, sd 2965 ft. Stanton Oil & Gas Co.'s J. W. Riley 1, sd 3500 ft.

STERLING COUNTY — Chicago-Texas Oil & Gas Co.'s D. C. Durham 1, sd 1427 ft; Durham 2, dr 935 ft. Co-Operative Lease & Development Co.'s Douthitt 1, sd 1775 ft. Fidelity Oil Co.'s G. R. Hull 1, sd for cas 1640 ft.

STONEWALL COUNTY — Elder Nance et al's Ward et al 1, lcn.

TAYLOR COUNTY — Sanger Oil & Ref. Co.'s McClure 1, lcn; Tom Sawyer 1, sd 2700 ft; S. P. Hollingshead 1, rig.

TERRELL COUNTY—R. E. Dunn et al's Co-Operative Investment Co. Fee 1, lcn. Southwest Texas Oil & Gas Co.'s S. W. T. No. 1, sd 3515 ft.

TOM GREEN COUNTY — Ranger Investment & Development Co.'s Harris 1, dr by tools, 3370 ft.

UPTON COUNTY—W. P. Morris et al's H. M. Halff 1, (Sec. 50, C. C. Phillips sur) spudding.

VAL VERDE COUNTY—East Del Rio Oil Co.'s Russell 1, sd 1800 ft. Independent Operators, W. F. & W. E. Whitehead 1, sd 2200 ft.

WARD COUNTY—Arthur Pitts Oil Co.'s Soda Lake 1, sd 2205 ft; River 1, sd 4675 ft. Cook & O'Brien's G. W. O'Brien 1, sd 1175 ft. Trans-Pecos Oil Co.'s Longnecker 1, sd 1765 ft.

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ANDERSON COUNTY — Roeser Pet. Co.'s J. D. Via, (Isaac Simpson sur) cemented cavey hole, td 4411 ft.

BOWIE COUNTY—Boyd Oil Co.'s C. H. Thompson 1, (Jacob Barkman sur) dk. Mission Oil Co.'s W. H. Nelson 1-A, (Nancy Dycas sur) dr 1125 ft. Geo. B. McCullough & Roell's W. R. Williams 1, (L. M. Rice sur) spd and sd.

DELTA COUNTY—J. C. McNeil et al's M. C. Patrick 1, (D. Hodges sur) sd to abn 2820 ft.

FRANKLIN COUNTY—J. C. McNeil et al's J. C. Harper 1, (J. S. Clift sur) sd for water, 2783 ft. Marshall & DeGenther's Hanks 1, (Swanner sur) co to test show of oil and gas, 875 ft.

FREESTONE COUNTY — Hall & Hodges et al's F. E. Gaddy 1, (H. Howard sur) Austin chalk from 2607 to 2950 ft, dr broken sandy shale 3380 ft.

HOPKINS COUNTY—The Texas Co.'s M. F. Enix 1, (J. Halle sur) sd for drill stem 3680 ft. Gulf Production Co.'s W. J. Davis 1, (Jas. Clark sur) lcn. C. A. Kelsey et al's Addie Brooks 1, (D. Dowdle sur) sd for water 1605 ft. Bar-Tex Drilling Co.'s C. H. McClure 1, (D. Waggoner sur) dk. Stough & Potts' Fitzgerald 1, testing oil sand 480 ft.

HENDERSON COUNTY—Fred E. Haynes et al's E. G. Bounds 2, (Henry Jeffreys sur) sd for water 1955 ft.

HUNT COUNTY—Gulf Production Co.'s C.

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M. Cannon 1, (Robt. Ragsdale sur) dk. Sam Tallal-C. A. Kelsey et al's J. W. Barnett 1, (Alex Smith sur) dk.

KAUFMAN COUNTY — Judge Germany et al's W. S. Kirby 1, (S. Edens sur) sd for water 2896 ft.

LIMESTONE COUNTY—Z. Gardner et al's Speight 1, (A. Averella sur) dr gumbo 2410 ft.

LAMAR COUNTY—Interstate Oil Co.'s Ben Hayes 1, (Larkin-Rattan sur) steel dk.

NAVARRO COUNTY—Boyd Oil Co.'s C. R. McCowan 1, (Morris Webb sur)sd 3248 ft; C. R. McCowan 2, (Morris Webb sur) trying to shut off water with 5 3-16-in cas, td 3228 ft. Gilbert Johnson et al's J. W. Greer 1, (G. Rushian sur) lcn. Alex Patrick and A. G. Ilseng et al's W. L. Roberts 1, (Jos Mayor sur) sd 1740 ft.

RAINS COUNTY—Ferguson & Short Bros.' W. D. Peeples 1, (F. A. Tibbles sur) spd and sd.

RED RIVER COUNTY—Johnson Pet. Co.'s Lady Alice 1, sd for cas 2740 ft.

TITUS COUNTY—Magnolia Pet. Co.'s Geo. Antone 1, (M. V. Delgado sur) spudding with cable tools.

VAN ZANDT COUNTY—Frank Buttram et al's (was Porter & Holmes) J. T. Dunbar 1, (Van Sickle sur) top pecan gap 1510 ft, Austin chalk from 2354 to 2766 ft, dr in Eagle Ford shale 2865 ft.

WOOD COUNTY—Golden Oil Co.'s J. D. Adrian 1-A, (Hallmark sur) top pecan gap chalk 1866 ft, dr 2015 ft.

BELL COUNTY—Camp Elm Oil Co.'s F. Spaniel 1, (Woodford sur) sidetracking bit 1040 ft. Hartman et al's Warrick 1, (Ingram sur) sd 2835 ft.

BURLESON COUNTY—Burleson Oil Co.'s Rogers 1, (J. P. Cole sur) sd 2345 ft. Beattie Synd.'s Giesenslag 3, (L. Lawrence sur) fsh 3120 ft.

FALLS COUNTY—Brazos Falls Oil Co.'s W. E. Johnson 1, (Chambers sur) dr lime 930 ft. Grover Stiles et al's Ruble 1, (S. W. Jordan sur) ur 2095 ft. Highbank Oil Co.'s Peacock 1, (J. H. Pierson sur) sd 3065 ft. Mayflower Pet. Co.'s Covington 1, (S. D. Robertson sur) sd for shot in upper pay, td 2630 ft. Myrin Oil Co.'s DeGraffenreid 1, (D. Aguirre sur) sd 1710 ft. Edwards et al's A. F. Brown 1, (M. Pryor sur) sd 2105 ft. Jones & Martin's Long 1, (Harvey sur) sd 1650 ft. Pierce Pet. Co.'s Wm. Clark 1, (John West sur) co to set cas 3550 ft. Post Oak Oil Co.'s Penny 1, (J. A. Mancha sur) ur 1700 ft. C. W. Harrison et al's J. M. Preston 1, (H. Anderson sur) lcn.

McLENNAN COUNTY — Anderson & Sullivan's McGee 1, (L. G. Gray sur) lcn. Waco Pet. Co.'s Taylor 1, (Martinez sur) sd 1270 ft. Graver et al's Case 1, (G. A. Roberts sur) ur 1310 ft. Stiles-Grooner-Croft & Lynch's J. E. Helton 1, (W. S. Fridge sur) lcn.

MILAM COUNTY—Brady Bros. et al's Baldridge 1, (Chambers sur) lcn. Bruten Falls et al's Holloman 1, (W. Hill sur) dr 435 ft. Beverly Oil Co.'s M. E. Ashley 1, (J. Robinson sur) fsh 3300 ft. C. A. Braden et al's Woodall 3, (Wickson sur) dr shale 925 ft. Davis et al's Shelander 1, (Josie Lee sur) fsh 980 ft. Fritz Fuchs et al's J. Deckal 1, (Jackson sur) abn 1200 ft. National Ref. Co.'s Dilworth 1, (J. J. Acosta sur) sd 1200 ft. Kemp & Underwood's Hofley 1, (Hubert sur) sd 1310 ft. Culver et al's Bremond 1, (Liondo sur) fsh 2980 ft. Von Ganten et al's R. Von Ganten 1, lcn. Fritz Fuchs et al's Joe Brown 1, (Delgado sur) lcn.

ROBERTSON COUNTY—J. C. Bland et al's A. W. Wilkerson 1, (Francisco Ruiz sur) 3 miles east of Hearne, dr chalk 3065 ft.

North Texas Wildcats

COMPLETIONS

Company, Well and Location	Initial Production Bbls.	Depth
Clay County—		
Texland Prod. Co.'s Johnson-Ashland 1	*	2005

DRILLING REPORT

BAYLOR COUNTY — Batchelder & King's E. S. Wallace 1, sd water 100 ft. Crittenden et al's Hawkins 1, sd water 1615 ft. Dallas Oil Co.'s Showers Bros. 1, dr 1000 ft. Independent Oil Co.'s Robertson School land 1, dr 2165 ft. C. B. Jetter et al's F. Gatzki 1, sd 660 ft. Magnolia Petroleum Co.'s W. B. Mills 1, fsh 1820 ft. D. H. Moore et al's H. H. Fancer 1, dr 800 ft. Richardson Bros. et al's Wallace 1, sd 255 ft. Sheldon et al's Martin 1, sd 110 ft.

Clay County—Atlantic City Prod. Co.'s Scaling 1, dr 2895 ft. Blake & Diesel's Hansard 1, bailing water, sand 1330 ft to 1333 ft. Bowen & Ross' Stine 1, dr 1870 ft. Callender & Cumley's Stine 1, sd 1790 ft. L. R. Dixon et al's R. H. Godfrey 1, sd 1310 ft. Gulf Production Co.'s C. M. Worsham 4, (rotary) dr 1775 ft. Hart & McKenna's Stine 1, bailing water, sand 1800 ft to 1805 ft. Knox Finley Dev. Co.'s J. V. Howell 1, dr 1210 ft. Lone Star Gas Co.'s Panhandle Fee 10, fsh 1150 ft; Panhandle Fee 11, dr 1110 ft; Martin 20, dr 1440 ft. Morris & D'Yarmitt's J. Stephenson 1, dr 885 ft. M. J. Sullivan et al's Scott 1, preparing to pump, sand 1202 ft to 1215 ft. Shelton Oil Co.'s H. Boddy 1, pulling big cas, sand 1055 ft to 1075 ft, est 25 bbls.

COOKE COUNTY—Big Indian Oil Co.'s W. B. Davis 1, sd 3445 ft. Red River Drilling Co.'s Whaley Jones 1, sd 1255 ft.

DENTON COUNTY — Arbuckle Asphalt & Pet. Co.'s Kate Fonteberry 1, sd 500 ft. Hillcrest Oil & Dev. Co.'s J. H. Rayzor 1, sd 1350 ft.

FOARD COUNTY — Landreth Production Co.'s F. Halsell 1, dr 2670 ft.

GARZA COUNTY—B. V. Blackwell et al's J. M. Boren 1, dk burned, td 2110 ft. Union Pet. Corp.'s C. C. Connell 1, sd 750 ft.

GRAYSON COUNTY—Zee Tex Oil & Dev. Co.'s G. W. Cannon 2, sd 3000 ft; Griffin 1, sd 2325 ft.

HASKELL COUNTY—S. S. Kouri et al's Couch 1, sd 1490 ft. Weirt & York's Colbert 1, sd 2330 ft.

KNOX COUNTY—Brazos Bend Oil Co.'s J.

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HOUSTON, TEXAS

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E. Clark 1, sd 2020 ft. Evans et al's Ella Lawson 1, dr 765 ft.

MONTAGUE COUNTY — Boyd Oil Co.'s Mrs. F. E. Loy 1, sd est 15,000,000 cu ft gas, 586 ft; Mrs. M. H. Salmon 1, sd 902 ft, est 75 bbls oil. Guaranty Fund Oil Co.'s A. Jordan 1, dd, dr 2650 ft. Gulf Production Co.'s M. E. Benton 1, (rotary) fsh 2250 ft. Mascho Oil Co.'s J. L. Howard 1, sd 3650 ft. The Texas Co.'s I. A. Gist 2-A, changing gate valves, td 668 ft, est 100,000,000 cu ft gas. Otic C. Wood et al's Summerour 1, dr 1785 ft.

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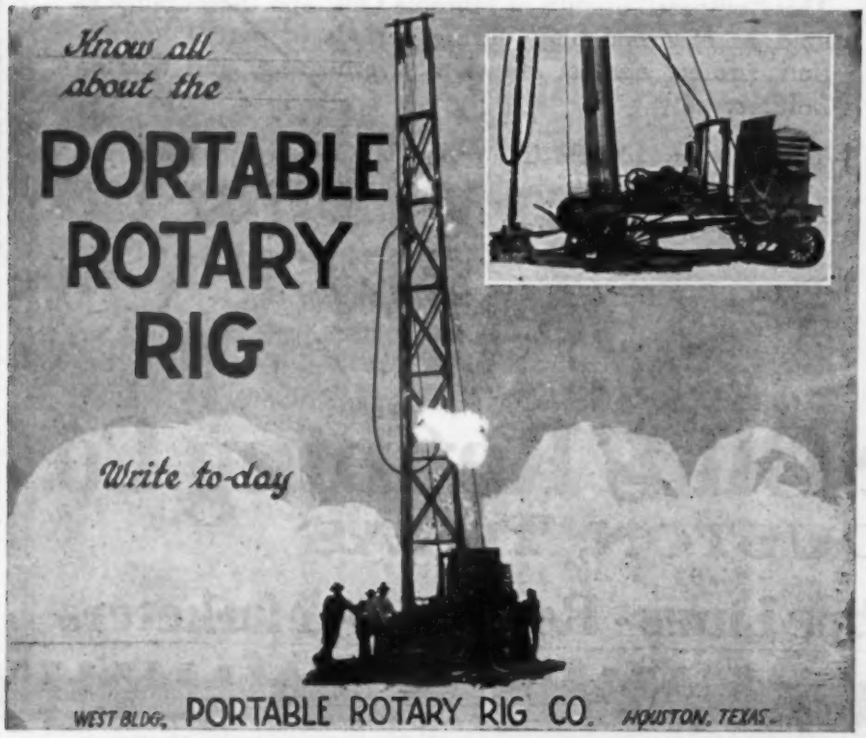

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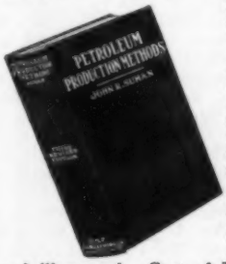

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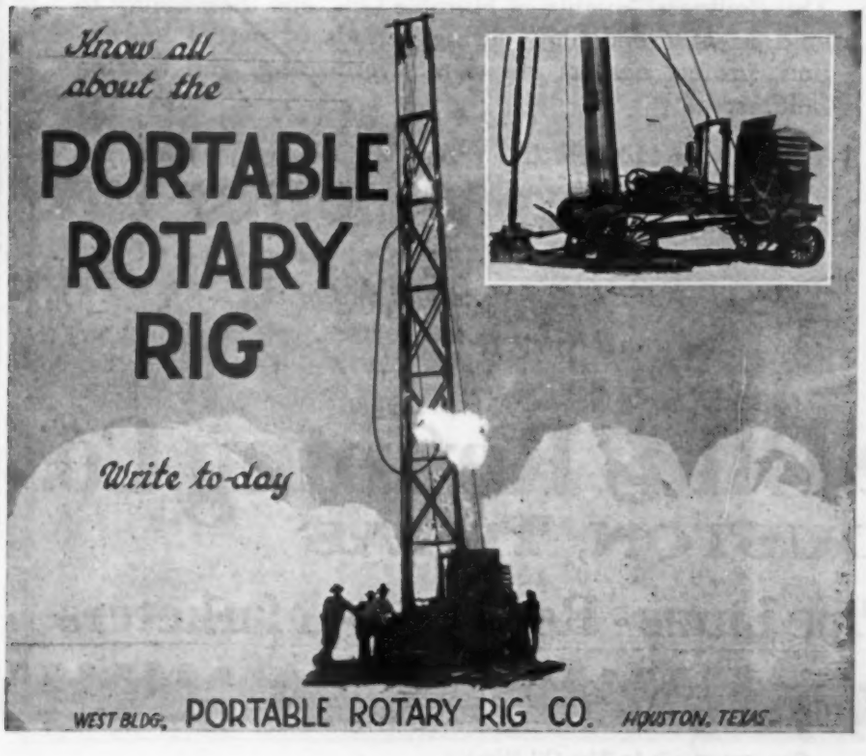

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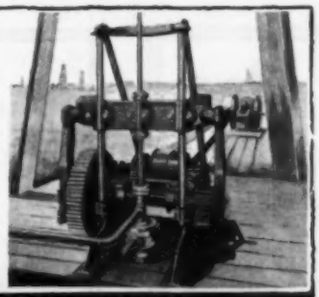

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ZAPATA COUNTY—H. J. McMullen's Nos. 1, 2 and 3 Serapio Vela, lcns. Mirando Oil Co.'s No. 14, Sur. 307, dr; 15, spudded in. Hill-Pierce Oil Corp.'s No. 2 Vela ranch, dr. Killam Interest's No. 1, Sur. 307, set casing at 1664 ft. Hill et al's No. 1 Haynes ranch, dr. R. K. Bateman's No. 1, Sur. 617, preparing to spud in.

Oklahoma Wildcats

ALFALFA COUNTY—McGuinne & Ward's Watts 1, C NE SW SE 21-17-10w, sd 3010 ft. Armstrong, Henle & Piffles' Turnbull 1, C NW SE NW 23-24-11w, sd 50 ft.

ATOKA COUNTY — McPhearson et al's Wild 1, SWc NW 7-2-9, dr 4180 ft. Henson et al's Dabney 1, C SE NW 17-4-11, fsh 1920 ft. J. P. Torrence et al's Fee 1, SWc NE 1-2-9, sd 2235 ft, h. f. w. Wapanucka Dev. Co.'s Underwood 1, C W L SE SE 28-2-9, co 1345 ft.

BECKHAM COUNTY—Lewis & Co.'s Burkhalter 1, C NE NW 6-9-24w, sd 2750 ft.

BLAINE COUNTY—Meyer's et al's Chronister 1, SEc NW NW NE 7-18-15w, sd 965 ft. Thompson's Dickerman 1, C SE SE SE 26-15-12w, sd 3213 ft. Okomo Oil Co.'s Eklemeyer 1, SWc 21-15-10w, sd 2610 ft.

BRYAN COUNTY—Lyons et al's Coombe 1, SEc SW NW NE 11-8-9, sd 975 ft. Alexander's Hampton 1, SEc NE 26-7-11, sd 1400 ft.

CANADIAN COUNTY — Thos. Revelle's Dawson 1, NEc 34-13-9w, sd 2528 ft. Carroll et al's Setter 1, SEc 2-13-8w, sd 110 ft.

CLEVELAND COUNTY—Garr Oil Co.'s Holland 1, NEc SE 31-10-4, sd 2620 ft.

CUSTER COUNTY—Hoover Oil Co.'s No. 1, NWc SE 34-1-14, sd 2510 ft. Magnolia's Cutfinger 1, NWc SE 17-13-14w, dr 7950 ft.

COAL COUNTY—Bosie Oil Co.'s Heck 1, SEc 18-2-9, rig. Bearman et al's Payte 1, SWc NW NE 32-2-9, sd 2780 ft. Guy Vaughan's Nichols 1, SWc 1-1-11, rig. Douglas Oil Co.'s Johnson 1, C NW SW 12-5-9, dr 1600 ft.

GRANT COUNTY—Embry et al's Edwards 1, C SE SE NW 20-26-4w, sd 1000 ft. Midwest & Gulf's Moon 1, NEc NW 8-27-8w, sd 2300 ft. Phillips Pet. Co.'s Riding 1, NEc SE NW 29-29-4w, sd 3038 ft. Frank Travis et al's Fuss 1, SWc NW NW 3-27-4w, dr 900 ft.

GREER COUNTY—Neal et al's Johnson 1, SEc NE NW 3-7-22w, sd 1200 ft. Boss & Terrills' Van Victor 1, C SW SW 4-3-22w, rig.

HUGHES COUNTY—Furhamn Pet. Co.'s O'Miller 1, SWc SE SE 5-7-9, set 5-inch 3340 ft. Mathers & Skelley's McClain 1, C SW SW 4-5-11, sd 3026 ft. Dixie Oil Co.'s Irvine 1, SWc NW SE SE 18-8-10, dr 3040 ft.

JACKSON COUNTY—J. D. Wade's No. 1, C SW NW 15-1-23, swdg 6-inch 2810 ft. J. R. Abernathy's Snodgrass 1, C NW NW 15-1-23w, sd 1601 ft.

JEFFERSON COUNTY—Shawver et al's Anderson 1, SEc NE 31-4-8w, sd 1200 ft. Landis et al's Standfield 1, SEc 33-7-0w, sd 1150 ft. Roy Johnson's Mullen 1, NEc NW 9-4-4w, dr 1110 ft. Barker et al's 1, Major 1, C SE SW 34-5-6w, lcn. Godley Oil Co.'s Woodwarth 1, C NE NW 36-5-4w, rig.

JOHNSON COUNTY—Washita Oil & Gas Co.'s Trootes 1, C SE SE NE 7-4-4, sd 2180 ft. United "8" Oil Co.'s Holden 1, NWc SW NW 36-5-6, sd 2330 ft.

KAY COUNTY—Ostot Dev. Co.'s Rohos 2, C NE SE 3-27-1, sd 3410 ft. Day Oil Co.'s Vandatta 1, SWc NW 8-26-2w, fsh 2835 ft.

KIOWA COUNTY—Connor et al's No. 2,

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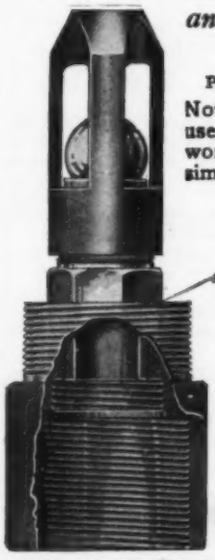

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LOGAN COUNTY—Buford-Brim Oil Co.'s Newman 1, NWc NW 32-19-3w, casing trouble 2345 ft. Okla Drilling Co.'s Johnson 1, SEc SW 36-15-2w, sd 1716 ft. Franklin Oil Assn.'s Moore 1, NWc SE SE 28-19-4w, dr 1820 ft. McMunn & Nixon's Field 1, SWc NE SE 35-7-4w, rig. Haley & Pioneer Pet. Co.'s Quiar 1, SWc SE 33-18-3w, rig rebuilt. Pluto Oil & Gas Co.'s Lair 1, C S L N½ SE 28-16-1w, sd 750 ft. Gilliland Oil Co.'s Ohm 1, C NW 5-19-2w, sd 900 ft. Magnolia Pet. Co.'s Pritchard 1, NWc 23-15-1e, dr 1435 ft.

LOVE COUNTY—Wichenheiser et al's Beal 1, NEc SE 13-5-3, dr 3290 ft. Driller Syndicate Oil Co.'s Wilson 1, NWc NE 11-7-2, sd 2830 ft.

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MARSHALL COUNTY—P & H Oil Co.'s Franklin 1, C E L NW NE SW 34-6-7, fsh 1820 ft. Sims Oil Co.'s Starritt 1, SEc NE SE NE 29-63, dr 1125 ft.

OKLAHOMA COUNTY — Firestone Oil Co.'s School 1, NWc SE 36-11-3, fsh 3976 ft.

PONTOTOC COUNTY—Harper et al's Dener 1, NWc SE SE 19-5-7, dr 2500 ft. Smith et al's Norris 1, SWc SE 34-4-6, sd 2430 ft. Riverside Oil Co.'s McFarland 1, NWc NE NW 4-5-5, sd 650 ft. Roy Carter's Burk 2, NEc SE SE 32-5-5, sd 2960 ft. C. J. Wrightsman's Floyd 1, SWc NW NE 24-4-4, dr 1778 ft. Hughes et al's Falkner 1, C SW NE 2-4-7, sd 1035 ft. Galloway et al's Hays 1, NEc SE NW SW 13-3-6, sd 1160 ft. Craig et al's Starrett 1, NWc NE 5-4-5, sd 600 ft.

POTTAWATOMIE COUNTY—Ossie Oil Co.'s Howell 1, SWc NE 13-10-2, sd 2620 ft. Davis Detrick's McGahey 1 SEc 10-6-2, fsh 3700 ft. H. G. Guinnup et al's Floyd 1, SWc SE 12-11-3, fsh 3670 ft. North American Oil Co.'s Madgett 1, NWc 25-10-4, sd 460 ft. Maud Oil Products Co.'s Yinson 1, NEc SW 18-7-5, sd 1150 ft. McMann Oil Co.'s Neghan 1, SWc NW 12-7-4, sd 100 ft. Day Oil Co.'s Bell 1, SEc NW NE 9-5-3, dr 3828 ft. Halmond Osmond et al's Fiddler 1, SEc NW 4-5-5, sd 545 ft.

ROGER MILLS COUNTY—Twin Hills Oil Co.'s McClure 1, NWc 15-15-26w, sd 3021 ft. Trio Oil Co.'s No. 1, SEc NW SW 3-13-26w, sd 3036 ft.

SEMINOLE COUNTY—Maxwell et al's Charty 1, C NE NW 33-6-6, dr 1610 ft. T. B. Slick's Sanny 1, 19-6-7, dr 3267 ft. Wm. McDougal's Dindy 1, C SW SW 20-6-7, dr 3310 ft. R. F. Garland's Winey 1, C NE NW 6-6-8, r 1000 ft.

TILLMAN COUNTY—A. L. Spear's Couch 1, NWc NE SW 10-4-18w, sd 1590 ft.

WASHITA COUNTY — McCoy et al's Preter 1, C SW SW NE 9-8-15w, sd 3115 ft. Sun Ray Oil Co.'s Rice 1, SEc 33-8-18w, dr 1942 ft.

WOODS COUNTY—Victor Oil Co.'s Van Buskirk 1, SWc SE 10-25-15w, sd 960 ft.

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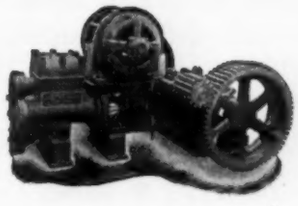

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BARBER COUNTY—R. B. Brown's No. 1, NWc SE NE 33-3-14w, r 3520 ft; Elsa 1, SWc 27-32-14w, rig.

BARTON COUNTY—Cheyenne Oil Co.'s Sooy 1, SWc SW 27-18-12w, sd 3525 ft. Haynes et al's No. 1, NWc 31-12-12w, sd 1700 ft. Mountain States Oil & Gas Co.'s No. 1, SEc NE 22-18-13w, sd 3214 ft. Jasper & Becahka's Schauf 1, SEc NW 11-16-12w, sd 2680 ft. Huffine et al's Smith 1, C NE SW 21-19-12w, sd 1605 ft. Streeter & Stearn's Brown 1, NEc SW 21-19-12w, repairing rig, td 3325 ft.

COFFEE COUNTY—Sunbeam Pet. Co.'s Andrews 1, NWc NE 33-20-15, rig. Thad O'Day's Allen 1, NWc SE 13-21-15, sd 900 ft. Manhatten Oil Co.'s Elliott 1, NWc SW 14-23-13, sd 350 ft. White Eagle Ref. Co.'s No. 1, SWc NE 26-19-13, r 1835 ft.

CLARK COUNTY—Watcham O. & G. Co.'s Morrison 1, SEc NE NE 2-22-21w, sd 4585 ft.

CLOUD COUNTY—Livingston et al's Murdock 1, NEc 7-6-4w, sd 365 ft.

ELLIS COUNTY—J. Alan Harvey's Polifka 1, SEc NW NE 18-13-17w, sd 2630 ft. Jas. Davis et al's Smith 1, NWc 14-12-16w, rig.

GEARY COUNTY—Liberty-Texas Oil Co.'s Wright 1, NEc 9-12-6, sd 750 ft; Foster 1, NEc SW 30-12-6, sd 2000 ft.

GRAHAM COUNTY—Keyes Bros. & Marine's Taxton 1, SEc NW 23-8-24w, sd 100 ft.

FINNEY COUNTY—Garden City O. & G. Co.'s Wann 1, SEc SE 36-21-30, sd 2890 ft.

JEFFERSON COUNTY—Northern Counties' Edwards 1, SEc NW NW 13-9-19, sd 3405 ft.

KINGMAN COUNTY—Hale et al's Garner 1, SWc NW 34-27-7, sd 2543 ft.

LINCOLN COUNTY—Trees Oil Co.'s Kohler 1, SEc 36-11-10w, dr 3450 ft. Turman Oil Co.'s Dohl 1, SEc NW 25-12-10w, dr 3400 ft. Berry & Rosenthal's Lambert 1, C NW 31-12-10w, set 10-inch at 1750 ft. Amerada Pet. Co.'s Crawford 1, NEc SW SE 16-11-7, fsh 1815 ft. Equity Oil Co.'s Jellison 1, NWc SE 19-13-9, sd 2700 ft. Scott & Collins' Stone 1, SEc SW NE 19-11-6w, sd 50 ft.

NEMAHA COUNTY—Nemaha O. & G. Co.'s Meyers 1, NWc 19-3-11, sd 3250 ft.

MITCHELL COUNTY—Alcorn Oil Co.'s Beeder 1, NEc 10-9-8w, r 2630 ft.

OSBORNE COUNTY—Ligett et al's Worley 1, NWc NW 34-10-15w, sd 3507 ft. Delhi Oil Co.'s Forman 1, SWc SW 30-10-11w, dr 2988 ft. Knight et al's Bealby 1, NEc NW NE 9-10-14w, spudded and sd.

OSAGE COUNTY—Rodgers & Bittles' Bertha 1, SEc NW 22-17-16, lcn. Mul-vit Dev. Co.'s Neil 1, NEc NW SW NE 8-17-17, sd 2735 ft. Moyer et al's Williams 1, NEc SW NW 12-18-14, rig.

POTTAWATOMIE COUNTY—Crawford et al's Stewart 1, C E L SE SE SE 17-9-12, rig; Greischabert 1, SWc SE SE SW 31-9-12, rig; St. Mary 1, SWc 11-1-12, sd 2290 ft.

RICE COUNTY—H. T. Proctor's Taylor 1, NWc 15-21-10w, sd 20 ft. Rino Oil Co.'s Decall SEc SW NW 35-19-8w, sd 3570 ft. h.f.w. Emerson Casey's Bush 1, NEc 7-20-18w, co 3565 ft. Stamcy et al's Barnes 1, SEc NE 21-20-6w, fsh 2210 ft. Jasper & Beschka's Walker 1, SWc NE 10-18-6w, sd 30 ft.

RILEY COUNTY—Walton Oil Co.'s No. 1, NWc 20-10-12, sd 1600 ft. Pawnee Oil Co.'s Marks 1, SWc NE NW 26-10-6, sd 1700 ft.

ROOKS COUNTY—Keyes Pet. Co.'s Saindon 1, NWc SW SE 7-8-20w, rig.

RUSSELL COUNTY—Merriam et al's Murphy 1, C SW 11-12-12w, dr 3300 ft. P. & R. Corp.'s Haice 1, NWc SE 24-12-15w, r 3160 ft. Patton et al's Walbridge 1, C W L SW NE 4-13-15w, sd 3240 ft. Amerada Pet. Corp.'s Milke 1, SWc SE SW 20-12-15w, dr 3225 ft. White Eagle O. & R. Co.'s Dodge 1, SEc SW SW 29-11-15w, dr 700 ft. Pomeroy et al's Cooper 1, SEc 33-12-11w, sd 2000 ft. Alcorn Oil Co.'s No. 1 Seller, SEc 36-15-13w, r 2350 ft. J. Garfield Buel's No. 1, SEc NE SW 1-14-11w, fsh 2818 ft.

SALINE COUNTY—Tralls et al's No. 1, SEc NE NW 15-15-4w, sd 1010 ft.

SEWARD COUNTY—C. T. Dev. Co.'s Woods 1, NWc SE 34-34-34, sd 700 ft. Seward O. & G. Co.'s Selsey 1, NEc NW 2-33-33, dr 2427 ft.

TREGO COUNTY—Keyes Pet. Co.'s Walsh 1, NWc SE 5-11-25w, sd 1700 ft; Walsh 2, SWc NE SW 5-11-25w, sd 1550 ft. Keyes Bros. & Marines' Davis 1, NEc SW 16-11-24, r 3030 ft.

WABAUNSEE COUNTY—Williams et al's No. 1, NEc SW NE 15-13-12, fsh 3565 ft.

WASHINGTON COUNTY—Barnes O. & G. Co.'s Wichjam 1, SEc SW 9-5-5, sd 1305 ft.

WOODSON COUNTY—Equity Oil Co.'s Soloman 1, SWc NE NW 30-26-17, sd 3340 ft. Herman & Oglesby's Lauber 1, SWc 4-26-14, sd 560 ft.

Louisiana Wildcats

COMPLETIONS

Company, Well and Location	Initial Production Bbls.	Depth
Claiborne Parish—		
John Woodley's Calhoun 1, 26-21-6..	*	2988
De Soto Parish—		
Ulrey et al's Frost-Johnson 1, 3-11-15	*	3010
Union Parish—		
Frankel Brothers' Breazeale 1, 30-23-2w	*	2542
Love & Clark's Frost-Johnson 1, 7-23-1e	*	2328
Palmer et al's Frost-Johnson 1, 18-23-1e	*	2340

DRILLING REPORT

BIENVILLE PARISH — Borden et al's Thomas 1, 8-16-19, set 12½-inch 70 ft. Roxana Pet. Co.'s Bryan 1, 30-17-6, dk.

BOSSIER PARISH—Armistead et al's Bern-

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stein 1, 11-20-13, sd 1180 ft. Skannal et al's R. R. Lands Co. 1, 13-17-12, set 6-inch 2424 ft.

CADDO PARISH—Adams et al's Johnson 1, 16-14-16, dry 1618 ft, dr 1765 ft. Ark-Caddo Oil Co.'s Nickerson 1, 30-19-15, sd 2450 ft. Brewer et al's Sharp 1, 10-18-16, rig. Caddo Western Gas Co.'s Gardner-Blades 1, 2-16-15, r 2665 ft. Collins et al's Levy 1, 23-19-14, to test 2549 ft. Crude Oil Co.'s Alexander-Ledbetter 1, 27-16-14, sd 3655 ft. Louisiana-Texas Community Oil Co.'s McCoy 1, 15-23-16, fsh 3035 ft. Rowe-Daniels Synd.'s Rhodessa O. & L. Co. 1, 22-23-16, rig abn.

CALDWELL PARISH—Culver et al's Culver 1, 21-14-4e, r 2668 ft.

CLAIBORNE PARISH—Black O. & G. Co.'s Aubrey 1, 20-21-8, to set 6-inch 1430 ft. Dixie Oil Co.'s Eastep 1, 20-20-7, dr 2655 ft. El Dorado Chief Oil Co.'s McElwee 1, 13-22-7, lcn. Gulf Ref. Co.'s Farmer 1, 35-23-6, rig. Pomeroy et al's Hurman 1, 34-20-6, dk abn.

DE SOTO PARISH — Greyhound Synd.'s Pollack 1, 36-11-14, dr 1750 ft. Tarver et al's Hewitt-Hicks 1, 10-11-14, dr 1615 ft.

EVANGELINE PARISH — Invincible Oil Co.'s Manuel 1, 36-5-2, dr 750 ft.

GRANT PARISH—Grant Parish Pet. Co.'s Ball 1, 1-8-1w, dr 2200 ft.

LA SALLE PARISH—Bur-Ban Oil Co.'s Urania 2, 21-21-2e, dr 1750 ft. Columbia O. & G. Co.'s Urania Lumber Co. 1, 22-10-2e, lcn. Gulf Ref. Co.'s Urania Lumber Co. 1, 22-11-2e, dk; Urania A-1, 22-11-2e, sd 1022 ft. Stovall Drilling Co.'s Louisiana-Central Lumber 2, 27-10-2e, sd 2000 ft. Urania Pet. Co.'s Urania 4, 20-10-2e, to set 8-inch 1552 ft. Zeigen & Feazel's test, 22-10-2e, lcn.

LINCOLN PARISH—Buckner et al's Barrett 1, 13-20-3w, dr 1110 ft.

RED RIVER PARISH—LeGrande et al's Fee 3, 2-14-12, set 6-inch 2440 ft.

UNION PARISH—Cargile et al's Heard 1, 21-21-3w, sd 2409 ft. Costello et al's Nelson 1, 17-23-1w, dr 1100 ft.

WEBSTER PARISH — McDonald et al's Hortman 1, 15-20-10, rig.

WEST CARROLL PARISH—Arkansas Fuel Co.'s Fiske 1, 8-21-10e, dr 2595 ft. Orion Oil Co.'s Bain Wagon 1, 23-23-10e, sw 2900 ft.

Arkansas Wildcats

COMPLETIONS

Company, Well and Location	Initial Production Bbls.	Depth
Hempstead County—		
Dudley et al's Spates 1, 19-12-27...	*	2606
Hope Columbus Oil Co.'s King 2, 24-11-26	*	2156
Nevada County—		
Dudley et al's Grayson-McLeod 1, 32-11-21	*	2504

DRILLING REPORT

CALHOUN COUNTY—Arkansas Fuel Oil Co.'s Childress 2, 1-15-15, dr 2855 ft. Southern Drilling Co.'s Burrows 1, 25-10-20, lcn.

CLEVELAND COUNTY—Markle Synd.'s Plummer 1, 22-9-10, dry 2666 ft.

COLUMBIA COUNTY—Brown et al's Robinson 1, 23-18-23, sd 3034 ft. Heath Trust's Williams 1, 1-19-21, dr 2105 ft. Johnson et al's Sailles 1, 18-17-22, sd 740 ft. Kemp et al's Emerson 1, 7-19-19, sd 630 ft. Miller et al's Watts 1, 20-16-18, abn 1890 ft. Phillips et al's Davis 1, 15-18-21, sd 550 ft.

DALLAS COUNTY—Durr (Conway) et al's Riggs-Matlock 1, 3-8-15, sd 2380 ft.

DREW COUNTY—Graves et al's Karnes 1, 20-14-6, dr 2380 ft. King — Wilson's Trotter 1, 12-13-6, sd 900 ft. Ratcliff et al's Spencer 1, 21-14-7, sd 1650 ft. Rhodes et al's Harris 1, 5-13-8, sd 2007 ft. Spooner et al's Meyer 1, 4-16-17, sd 50 ft.

GRANT COUNTY—Arnold & Hill's Meeks 1, 8-4-12, rig. Haley & Evan's Pike 1, 8-6-11, sd 50 ft.

HEMPSTEAD COUNTY—Fullilove Drilling Co.'s Ford 1, 31-14-23, sd 50 ft. Simmons Trust's Adams 1, 36-12-27, sw 2700 ft. Meyer et al's Nicholls 1, 17-11-25, fsh 1980 ft.

LA FAYETTE COUNTY—Ken-Saw Pet. Co.'s Red River Lumber 2, 3-20-24, rig.

LITTLE RIVER COUNTY—Gaines et al's Thomas 1, 15-13-29, sd 3335 ft. Grote et al's Allen 1, 2-13-29, sd 2860 ft. Johnson et al's Hawkins 1, 10-11-31, dr 1350 ft. Red River Valley Oil Co.'s Taylor 1, 29-13-29, sd 2790 ft.

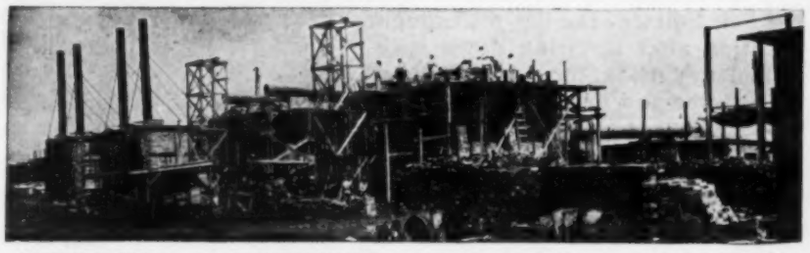
MILLER COUNTY—Kress et al's Thompson 1, 33-14-28, sd 917 ft.

HOWARD COUNTY—Brown et al's Cawking 1, 33-11-27, dk. Erickson et al's Jones 1, 25-10-28, dk. United Pet. Co.'s DeLaney 1, 8-11-27, dk.

NEVADA COUNTY—British Allied's Valley Lumber Co. 1, 31-11-20, dk. Greeson et al's Lester & Mills Lumber 1, 3-11-20, rig. Kan-Ark Oil Co.'s Honea 1, 12-13-21, sd 1700 ft. Lockhart et al's Porter-Cornelius 1, 17-10-22, dr 1100 ft. Prescott Oil Co.'s Henry 3, 10-12-20, sd 1000 ft. White et al's East 1, 13-13-22, sd 20 ft.

OUACHITA COUNTY—Dee et al's Criner 1, 21-15-19, dk. Morefield et al's McDaniels 1, 28-14-17, sd 2211 ft.

UNION COUNTY—Berry et al's Union Saw Mill 1, 14-19-11, sd 875 ft. Bondurant et al's Turbeville 1, 9-18-12, dr 2590 ft. Harrell Trust's Teele 1, 11-19-12, sd 3177 ft. Jeter Trust's Burnside 1, 33-17-13, sd 3055 ft. Lemond et al's Terrell 1, 22-18-14, dk. Traffic Oil Co.'s Goodwin 1, 20-16-14, sd 3026 ft.



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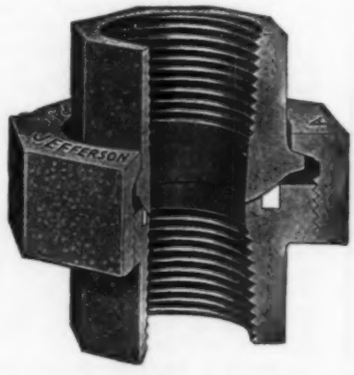

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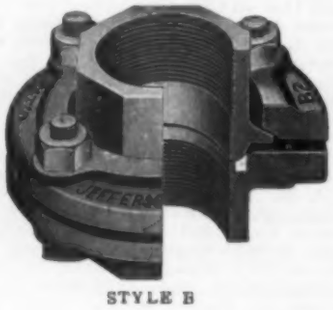
the iron and brass and also from being dislodged no matter how far the pipe may be screwed into the fitting. These parts are ground together and kept in pairs; thus you are assured of tight fitting unions and flanges.



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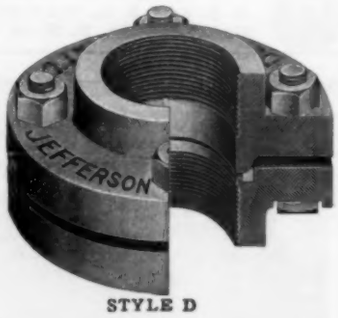

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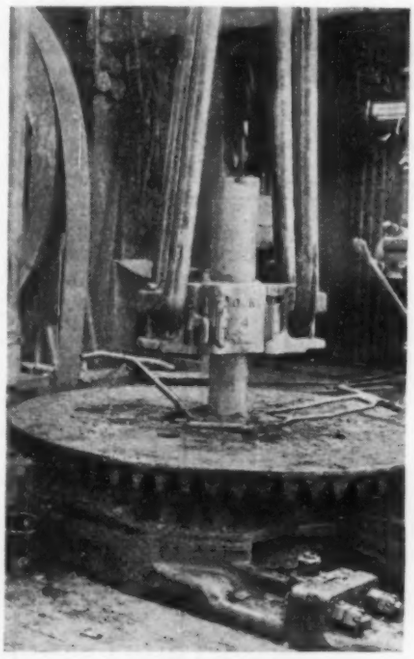

Dunn Safety Elevator Helps Make Record in California

That the Dunn Safety Elevator was used on the deepest rotary well in the world is regarded as a high point of distinction by the Dunn Manufacturing Company. The well was the Gardena No. 1, drilled by the Union Oil Company in the Dominguez field in California, and was abandoned at 7,319 feet.

When drilling at such depths it is imperative that no chances whatever be taken. The strain upon the derrick and all equipment involved in tremendous when drilling at great depths, and the entire well and property as well as the lives of all the workers are constantly in more or less danger.

It is reported that by using the Dunn Safety Elevator, the crews of the Gardena No. 1 were able to register a high and most emphatic compliment to the appliance, its strength, efficiency and reliability. Estimates placed the weight of the string in this well at more than 70 tons.

Due to its construction, the Dunn Safety Elevator is faster, safer, and better than any elevator ever before put out by the company. The elevator is declared by its manufacturers to be a big advance in elevator design, construction and operation.

While the elevator is under a load, the doors cannot be opened. The load must be released before the operator can open the door. When the door is within three inches of the completely closed position, the weight of the string on top of the elevator automatically closes the door and the latch completely and perfectly and holds them in this closed position.

Further information can be secured by writing the Dunn Manufacturing Company, Oxnard, California.

New Tubing Slip and Spider Being Used With Success

Portability and efficiency in operation are the two outstanding features of the W-K-M tubing slips and spiders, recently introduced to the oil industry by the W-K-M Company, Incorporated, West Building, Houston, Texas.

The tubing slip and spider can be used under any conditions where tubing or wash pipe is handled. Only one man is necessary to operate the slips and only one elevator is necessary.

Both the slip and spider are light in weight and can easily be carried from one location to another by one man.

Wickers are cut in the slip with herring-bone design so as to keep the tubing from accidentally turning in the slip.

The spider can be opened up quickly to allow the tubing catchers to pass through, merely by pulling out the pin and opening up the two parts.

Handles of the slip are held together with a latch, holding the tubing absolutely tight at the time. If a short string of tubing should be lifted up accidentally on account of the threads catching after the joint had been unscrewed, then there is no danger of the tubing accidentally dropping back into the well, because the latch holds the slips securely to the tubing until released by the operator.

The chain is used to secure the spider to the casinghead by wrapping it around the T of the casinghead, or around the flow line. The chain also prevents the turning of the spider when the tubing is being made up or broken out.

The tubing slip is designed to be locked quickly and enables the operator to get away from the casinghead while the fluid is spurting from the disconnected tubing.

Segments of the slips are held to handles in such a way as to give a small amount of horizontal movement to conform to the tubing, but no vertical movement of the segments is permitted. This prevents any one segment from dropping down below the others and swaging the tubing at this point. The manufacturers of the slips claim that the slips absolutely cannot swage tubing.

The slips and spiders are in use in several Texas fields, as well as in Southern Oklahoma.

The tubing spider can be attached to any ordinary casinghead in less than

The OIL WEEKLY will print on this page data on new oilfield equipment, improvements on old equipment, news of new catalogs, bulletins, etc. This department is handled exclusively by the editorial department and has no connection with the advertising department. Data will be carried on anything which the editorial department thinks of interest to our readers, regardless of whether or not the manufacturer is an advertiser in the The OIL WEEKLY.—Publisher.

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Manufacturer and Supply Dealer Notes

one minute and can be opened up to permit the tubing catcher to pass through it merely by pulling out the pin and opening up the two parts. The spider fits loosely on top of the casinghead, so that it automatically adjusts itself to the tubing which may or may not be in the center position.

A special gas saving device can be furnished which will enable operators to suspend tubing with the W-K-M slip and at the same time prevent any leakage of gas around the casinghead.

This device consists of a gasket made in one piece of tough rubber, tightly clamped around the tubing, with a heavy flange which fits between the casinghead and the tubing spider. The gasket remains clamped to the first joint of tubing, just the same as in the case of the old style tubing ring.

The great advantage of this method of suspending tubing is that the long slip grips the body of tubing and no weight is carried upon any collar.

Further information concerning the slips, spider and gasket may be secured by writing the W-K-M Company, Incorporated, West Building, Houston, Texas.

Multistage Pump Effective In California Fields

A new development in oil well pumps is attracting the attention of California operators after being thoroughly tried out and demonstrated in actual field experiments, it is reported by the new Los Angeles corporation which is marketing the device. The Zublin Multistage pump is said to deliver a greater daily production than the ordinary pump because it will not sand up, and tubing can be lowered into the fluid.

The plunger is made to fit any style or make of working barrel, the manufacturers announce, and is so constructed that any desired number of stages may be used according to the length of the stroke and working barrel.

The name implies the exact construction of the pump, i. e., "Multistage." A washing action is created between each stage which assures a lubrication of the entire surface of the walls of the working barrel. The result is that no sand can possibly work in between the plunger and the liner of the working barrel, which is always the big difficulty in a sandy well.

Plungers or sleeves of each particular stage of the pump are constructed of high grade steel highly resistant to abrasive action. This together with the lubricating principle, assures a long life for the plunger.

In each stage of the pump, there is also a ball and seat and it is pointed out that if a grain of sand should happen to get under one of the balls, preventing it from seating properly, the other balls and seats will take up the burden. This assures a constant and steady pump flow.

The total fluid pressure of the oil has a tendency to expand rather than to collapse the plunger sleeves inasmuch as the oil is picked up at the bottom and inside of the sleeves instead of at the top. This results in a closer fit to the barrel than that accomplished by any other mechanical device.

The Zublin pump also helps to check the gas pressure, due to two or three balls and seats, (according to the stages used) and the result is an even flow of oil instead of pumping by heads.

Each plunger sleeve is so constructed that it has a metal cup at its top which performs exactly the same work as a composition cup.

Further information may be secured from the Universal Pump Company, 54 East Slauson Avenue, Los Angeles, California.

D. J. Brown Succeeds Hubley With "Oilwell"

D. J. Brown, formerly vice president and sales manager of the Oil Well Supply Company, Pittsburgh, has been made vice president and general manager, to succeed the late Grant Hubley.

Back in 1887 when the state of Pennsylvania alone produced more oil than all the rest of the world put together, D. J. Brown started in the employ of the Oil Well Supply Company as an office boy. He has been with the company continually since that time, serving successively as order clerk, purchase and sales agent, assistant manager, treasurer and as vice president and sales manager. He is a typical example of the axiom that consistent, hard work brings a well-earned reward.

Since his association with the Oil Well Supply Company, he has seen the company grow from a group of a few men, to a tremendous organization which maintains more than 100 branches and factories scattered throughout the oil fields of the world.

Mr. Brown is thoroughly progressive. He is a firm believer in the Golden Rule as applied to business; is an especially hard worker; and is thoroughly liked and admired, not only by his associates and the entire organization of which he is now general manager, but also by hosts of "oil" men in all parts of America. He is known to his friends and associates as "D. J." or plain "Jim."

Mr. Brown is a director of Oil Well Supply Company, Republic Casualty Company, Homewood Peoples Bank, Standard Life Insurance Company, and Jumbo Manufacturing Company, and a member of Duquesne Club, Union Club, Shannopin Country Club, and Traffic Club. He attends the Fourth United Presbyterian Church of Pittsburgh, N. S.

Pan American Subsidiary Will Build Elk Hills-Los Angeles Welded Line

Los Angeles, Calif., Aug. 23.—The Los Angeles Midway Pipe Line Company with an authorized capital stock of $5,000,000, has been formed and incorporation papers filed by the Doheny interests (Pan American), preparatory to the building of a 10-inch welded pipe line from Watson Station in the Los Angeles Harbor district to Elk Hills, a distance of some 140 miles.

It has been announced that E. L. Doheny, Jr., son of the head of the Pan American and other Doheny interests, will be president of the new company.

This will be the second pipe line to operate out of the San Joaquin Valley oil fields with Los Angeles as its terminus—the first line being operated by the General Petroleum Corporation.

It is understood that the first ship load of pipe for this line is due at Los Angeles Harbor August 25 or soon thereafter. The pipe will be shipped from Los Angeles Harbor to points along the line, most of the pipe going by trucks direct from the harbor to the right of way. The Mike Land Transportation Company of Los Angeles will handle the transportation in connection with the building of the line, and it is thought that Mike Land will also lay some of the pipe.

Pumping stations are to be located about 10 miles apart and power at the stations will be furnished by 300 horse power Snow Diesel engines, the order for which having already been placed with the Worthington Pump and Machine Corporation.

Due to the fact that all of the right of way has not been secured, officials of the company do not care to give out further details of the line. But it is generally understood that actual work will likely start within two weeks and that the line will be in operation in a year or less time.

The line will serve the Elk Hills naval reserve and also other areas in that general vicinity, in addition to tapping other fields enroute Los Angeles. The Pan American has a large refinery operating at Watson Station in the Los Angeles district and work has started at the plant on additions that will enable the company to manufacture all classes of lubricants.

This is expected to be the largest pipe line project for either 1924 or 1925 in the West.

LETTERS OF Paul Peebles P.S.G.

mi deer cleopatry

well cleo hunny I gotten out of jale at last just as slick as I sed I wood when mi frend what has the influents 2 get me off gotten time 2 attend to me whitch was after I had bin in the jale house about two weeks. he had me tooken before a commishuner & I told him how it was that they gotten me & he sed it was a dirty shame the way they done me. he sed he had herd all kinds of excuses for makin booze but that mine is the limit & sutch a good lire as I am ort 2 not 2 hav 2 anser 2 no charges. but he sed that it was his sworn dutty 2 uphold the dignity of the law & for that reesen he wood hav 2 hold me under bond 2 wait the akshun of the grand jury. so mi frend made the bond & now I am a free man agin only I will hav 2 do sum moar explainin later on & all on account of them laws not havin no sents & arestin me. I will mabe be a ossifer miself sumtimes & if I do I am shore goin 2 git it back on them.

well just as soon as I gotten out of jale I neerly gotten put back on account of anouther misunderstandin. I went & gotten the widder's car out of the shop where it has bin at ever sinct I told yu about runnin it in2 that fillin stashun. well I cum drivin down town & the first thing I noed it was a cop about 2 blow his hed off in a whissel at me. hunny I had been in jale so long that I had forgot about them fool traffick lights & had run bi them & also made the rong tern. well hunny yu can kill a man in this town & mabe git away with it but yu cant run bi no traffick lights or make no experiments with a still without gittin arrested for it. but I gotten out of it agin alright. the cop cum runnin up 2 me & sed 2 me "I gess yu are from goose creek 2?" well hunny I do not no how he noed it. But I told him Iwas & he sed alright go ahed. it was just 25 moar that had giv him the same excuse that day.

well hunny I am goin on a automobeel tower for a vakashun. I hav bin workin so hard for so long that I need 2 git out & hav sum recreeashun as the feller says & the widder what I stays with wants me 2 go with her 2 chuffer the car. hunny don't misunderstand me. I aint gittin 2 be no jitney driver. I am jest goin along with her as a frend like. & yu need 2 not be worried about it. I gess slim will be tellin yu some moar lies about me & this hear widder, but it aint nuthin 2 it.

It is just like this hunny. yu see I owe her sum board munny & I hav 2 keep her in a good humor with me so she wont get ugly about collectin on me whitch wood be a little embarrasin rite now. so she wants that we shoold go so I am goin 2 keep her in a good hoomer. we will travel in the car & hav got 2 cots 2 camp out under the trees & her littel boy is goin along so it will be alrite. I wood a hole lot rether come down 2 goose creek for mi vakashun hunny, but it is like I told yu. & ennyway I want 2 git away from bizness where it aint no oil or talk of oil. & if I was 2 cum 2 goos creek yu no how it wood be. ennyway I don't want 2 sea yore maw till after she has gotten a chanct 2 forget about me bein in jale. I no how she wood razz me & she is always so unreesenabul with me. I do not think she likes me annyway mutch.

hunny I am goin 2 hav 2 take up golluf. I see it in the pappers that they are goin 2 hav a golluf ternement at tulsey this fall strickly for oil men & jimmie gardner is mixt up in it 2 make it a go. well I always try 2 help jimmie out because I am a good frend of hisn & if he needs sum hands 2 play in the game well I will hav 2 accomodate him. it will be a champeenship afare & I alwaze shines in champeenship affares it dont make no difrents what it is. I did not think that I am ritch enuff 2 play golluf, but the way this hear thing I seen in the paper talks it is a hole lot of oil men & supply salesmens whitch plays the game & sum geeologists. so if they can play this year I gess I can 2. if it is enny munny 2 change hands in the deels well I no that I can play in the champeen class because I am just natral lucky.

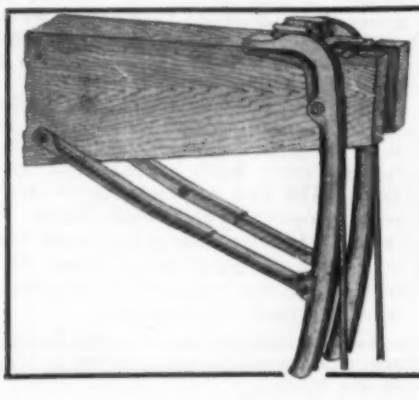
hunny I will not be gone on mi vakashun moar than one week or mabe ten days & then I will be back in huston & mabe will git a chanct 2 cum down 2 sea yu. & even if I do not git 2 cum yu will no that it is sumthin importent preventin me because I am shore am strong for yu hunny & wood rather be with yu than annywheres I no of. so yu will understand how it is that I am spendin mi vakashun with this hear other woman. it is simply because I am the vicktim of a circumstants over whitch I aint got no control.

so dont yu let that slim person poisen yore mind with no lies & insinera tions against me. I am trew 2 yu hunny & yu no it because I hav often told yu the same thing.

I hav not herd no moar from mi bizness in arkansaw but mabe I will git somethin from it shortly & then we can both of us go to the tulsey show in grate style. I hav bin plannin that trip for a long time. when me & yu go on a trip like that I gess then slim will keep his mouth shut because if he was 2 talk about us I wood cave in his face. & mabe hunny bi that time we will be reddy 2 git married annyway & then it will be a hunny moon trip we will be takin & yu can be the queen of the ball & I will be the kink. anyway yu will be mi queen.

write 2 me at huston hunny so the letter will be hear at the post offis when I git back. I do not no where 2 tell yu 2 rite 2 me while I am on mi vakashun & ennyway the widder would be wantin 2 no who the letter was from & it aint none of her bizness. yu see hunny I am kinder stringing her along so as 2 keep her in a good humor but I don't never trifle with yu none hunny.

yore lovin paul.



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THE REX

Walking Beam Yoke

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Keeps the cable from cutting the beam. Keeps the polish rod working in a straight vertical line so that the wear on the polish rod and packing rings is eliminated.

REX TOOLS

1171 East 32d St., Los Angeles, Calif.
P. O. Box 1695 Houston, Texas

CORRECTION NOTICE

In an article which appeared on the New Equipment page of The OIL WEEKLY a short time ago, describing the Hild Differential Drive, it was stated that this drive is being manufactured by the Westinghouse Electric & Manufacturing Company and that information concerning the drive could be secured from that company. This was an error and should have been the Oil Well Supply Company, Pittsburgh, Pennsylvania, instead.

Pumps That Genius Builds

Genius is infinite painstaking.
—Longfellow.

NOT EVERY Oil Man does or indeed can appreciate Transit Pumps. They are not made to appeal to the rabble. Rapid fire slap bang sales and manufacturing methods never enter into their orbit. They are the product of infinite pains. They are frankly of the aristocracy. They are economical without being cheap. Like a good car, they cost less in the end and are vastly more satisfactory all the time.

Transit Pumps cover every producing, pipe-line and refinery need, large and small, easy and difficult. There are special Transit Pumps for unusual requirements, as for instance a block-valve type for successfully handling heavy, viscous liquids so hot as to incapacitate any other pump.

To a man really interested in pumps, nothing could be more fascinating than a perusal of illustrated and descriptive bulletins on Transit Pumps, sent anywhere on request. Write for yours now, indicating what sort of pumps you are interested in.

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Tulsa, Okla. Pittsburgh, Pa.

West of the Mississippi—Stores Everywhere

In Oil Country Equipment—the most HUMAN organization in America

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Trade Mark Reg. U. S. Pat. Off.

plunger

Working Barrels

Other important advantages are:

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2—No smooth finish necessary in the working barrel tube.
3—No metal plunger in contact with a metal cylinder.
4—Will pump floating sand.
5—Will not cut oil.
6—Eliminates frequent rod pulling.
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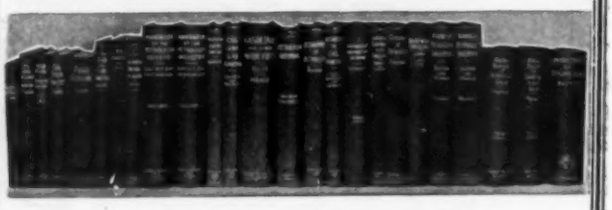
Bradford Motor Works

Bradford, Pa.

Branch Factory and Warehouse, Tulsa, Okla.



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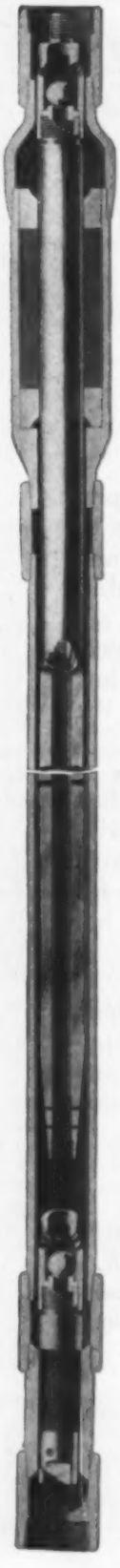

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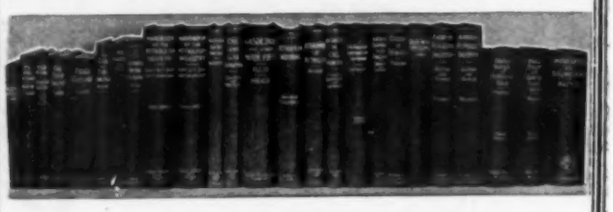

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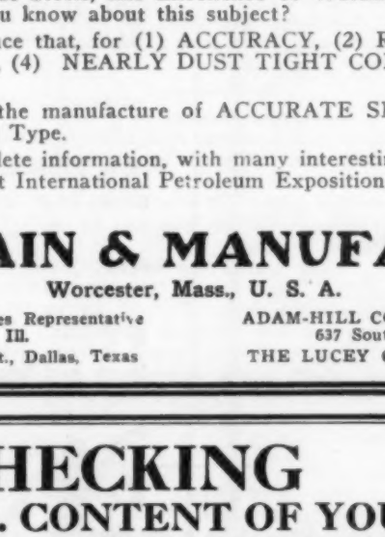

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Fuel Oil—
Gulf Ref. Co.
Sinclair Ref. Co.

Gas Traps—
Continental Supply Company
Trumble Gas Trap Co.

Gasoline Extraction Compressors—
Continental Supply Company
Bessemer Gas Engine Co.
Sullivan Machinery Co.

Gasoline and Oil Storage Tanks—
Butler Mfg. Co.
Graver Corporation
Continental Supply Co.
Kansas City Struct. Steel Co.
Parkersburg Rig & Reel Co.

Gauges—
Continental Supply Company
Oil Conservation Engineering Co.

Genuine Wrought Iron Casing—
Reading Iron Co.
Superior Tube Co.

Geologists—
A. C. Bierman
Samuel J. Caudill
Alexander Deussen
David Donoghue
Edwin B. Hopkins
Foster & Reiter
Heath M. Robinson
L. H. Owen
Herald Bros.

Grips and Clamps—
Continental Supply Company
J. P. Ratigan
W-K-M Co.

Heat Exchangers—
Brown Welding & Machine Co.

Hoists—
Alamo Iron Works

Hose—
Continental Supply Company
D. F. Connolly Agency

Houses—
Crain Ready-Cut House Co.

Hydrometers—
The Braun Corp.

Laboratory Equipment—
Continental Supply Company
Fort Worth Laboratories

Lapwelded Steel Boiler Tubes—
The Tyler Tube & Pipe Co.

Lighting Systems—
Bridgeport Machine Co.
Continental Supply Company
R-F-E Electrical Mfg. Co.
Westinghouse Elec. & Mfg. Co.

Line Pipe—
Continental Supply Company
Republic Supply Company
Reading Iron Co.
Superior Tube Co.

Manufacturers—
Robinson Packer Co.

Maps—
Heydrick Mapping Co.

Meters—
Continental Supply Company

Motors—
Westinghouse Elec. & Mfg. Co.

Oil Field Supplies—
American Well & Pros. Co.
Bridgeport Machine Co.
Butler Mfg. Co.
Continental Supply Company
D. F. Connolly Agency
The Cunningham Company
C. C. Fetty & Co.
Frick-Reid Supply Co.
Graver Corporation
Gulf Coast Mach. & Sup. Co.
Erle P. Halliburton
International Supply Co.
Kansas City Struct. Steel Co.
Lee C. Moore & Co.
Lucey Manufacturing Corp.
The National Supply Cos.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.
Peden Iron & Steel Co.
Pelican Well Tool & Sup. Co.
Republic Supply Company
Regan Forge & Engineering Co.
Robinson Packer Co.
H. M. Spence
Smith Separator Company
Southern Brass Mfg. & Plating Co.
Superior Tube Co.
United Iron Works, Inc.
W-K-M Co.
Western Supply Company

GUIDE FOR PURCHASERS—Continued

Oil Stills—
The Braun Corp.

Oil Thieves—
The Braun Corp.

Oilwell Casing—
Continental Supply Company
Frick-Reid Supply Co.
Republic Supply Company
Superior Tube Co.

Oil Well Cementing—
Erle P. Halliburton

Overshots—
Baash-Ross Tool Co.
Continental Supply Company
LeBus Rotary Tool Works

Packers—
Continental Supply Company
The Guiberson Corp.
Layne & Bowler
Robinson Packer Co.
Pelican Well Tool & Supply Co.
Regan Forge & Engineering Co.
Western Supply Company
W-K-M Co.

Packing—
Continental Supply Company
D. F. Connolly Agency
Frick-Reid Supply Co.
The National Supply Cos.
Peden Iron & Steel Co.
Pelican Well Tool & Sup. Co.
Republic Supply Company

Paints—
Continental Supply Company
Peden Iron & Steel Co.

Panel Boards—
Westinghouse Electric & Mfg. Co.

Patents—
Hardway & Cathey
Jesse R. Stone

Pipe Grips—
Continental Supply Co.
W-K-M Co.

Pipe—
A. M. Byers Co.
Continental Supply Company
W. E. Detlor
Frick-Reid Supply Co.
F. W. Heitmann Co.
Harrisburg Pipe & Pipe Bending Co.
International Supply Co.
The National Supply Cos.
Oil Well Supply Co.
Peden Iron & Steel Co.
Reading Iron Co.
Republic Supply Company
David L. Schofield
Superior Tube Co.
Williamsport Wire Rope Co.

Pipe Screwing Machines—
Buckeye Traction Ditcher Co.

Pipe Wrenches—
Continental Supply Company
Dunn Mfg. Co.
The Guiberson Corp.
LeBus Rotary Tool Works
Republic Supply Company

Polish Rod Grips—
Sargeant Engineering Co.

Portable Buildings—
Butler Mfg. Co.
International Derrick & Equipment Company

Portable Compressors—
Continental Supply Company
Sullivan Machinery Co.

Portable Drilling Rigs—
Bridgeport Machinery Co.
Continental Supply Company
Lee C. Moore & Co.
Oil Well Service Co.
Parkersburg Rig & Reel Co.
Portable Rotary Rig Co.
The National Supply Cos.

Pulleys—
Continental Supply Company
Davis & Kuhns
International Derrick & Equipment Company
Lee C. Moore & Co.

Pulling Machines—
Clark Machine Co.
Continental Supply Company
Iron King Mfg. Co.
Safety Pulling Machine Co.

Pullers—
Davis & Kuhns

Pumps—
Axelson Machine Co.
American Well & Pros. Co.
Bradford Motor Works
Continental Supply Company
D. & B. Pump & Sup. Co.
C. C. Fetty & Co.
Frick-Reid Supply Co.
Gaso Pump & Burner Mfg. Co.
Goulds Manufacturing Co.
Lucey Manufacturing Corp.
National Transit Pump & Machine Co.
Oil Well Supply Co.
Pelican Well Tool & Supply Co.
Republic Supply Company
Southern Engine & Pump Co.
Texas Oil Pump Co.
United Iron Works, Inc.

Pumping Powers—
Continental Supply Company
C. C. Fetty & Co.
Frick-Reid Supply Co.
International Supply Company
Jensen Bros. Mfg. Co.
Kansas City Hay Press Co.
H. M. Spence

Refined Products—
Gulf Refining Company
Humble Oil & Refining Co.
Sinclair Refining Co.

Recorders—
Fort Worth Laboratories
The Foxboro Co., Inc.

Refinery Equipment—
Butler Mfg. Co.
Continental Supply Company
Graver Corporation
Kansas City Struct. Steel Co.
Oil Conservation Engineering Co.
Republic Supply Company
Smith Separator Company
Titusville Iron Works
United Iron Works, Inc.
Wyatt Metal & Boiler Works

Rig Irons—
Continental Supply Company
International Supply Co.
Lee C. Moore & Co.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.
Republic Supply Company

Rig Timbers—
D. D. Wertzberger

Rotaries—
International Supply Company

Rotary Rock Bits—
Continental Supply Company
Hughes Tool Co.

Rotary Fish Tail Bits—
Continental Supply Company
Pelican Well Tool & Supply Co.
Regan Forge & Engineering Co.
Republic Supply Company
W-K-M Co.

Separators—
Butler Mfg. Co.
Continental Supply Company
Smith Separator Company
Trumble Gas Trap Co.

Structural Steel—
Butler Mfg. Co.
Kansas City Struct. Steel Co.
United Iron Works, Inc.

Steel Derricks—
Continental Supply Company
International Derrick & Equipment Company
Lee C. Moore & Co., Inc.
Superior Tube Co.

Steel Crown Blocks—
Continental Supply Company
Gulf Coast Mach. & Sup. Co.
International Derrick & Equipment Company
Lee C. Moore & Co.
Parkersburg Rig & Reel Co.
Superior Tube Co.

Steel Manufacturers—
Colonial Steel Co.

Steel Storage Tanks—
Butler Mfg. Co.
Continental Supply Company
Graver Corporation

Strainers—
Continental Supply Company
Layne & Bowler Co.
Pelican Well Tool & Supply Co.
W-K-M Co.

Sucker Rod Lines—
D. F. Connolly Agency
Continental Supply Company

Sucker Rod Elevators—
The Cunningham Co.

Sucker Rod Hooks—
The Cunningham Co.

Sucker Rods—
Axelson Machine Co.
Columbus Sucker Rod Co.
Continental Supply Company
D. & B. Pump & Sup. Co.
Dunn Mfg. Co.
Frick-Reid Supply Co.
S. M. Jones Co.
The National Supply Cos.
Oil Well Supply Co.
J. P. Ratigan
Republic Supply Company

Sucker Rod Sockets—
Bradford Motor Works
Continental Supply Company
The Cunningham Co.
Brown Welding & Machine Co.

Swabs—
Continental Supply Company
The Cunningham Company

Tank Bolts—
Continental Supply Company
Steel Mfg. & Warehouse Co.

Tanks—
American Tank Co.
Butler Mfg. Co.
Black, Sivalls & Bryson
Columbian Steel Tank Co.
Continental Supply Company
The Brownwell Co.
Gantz Tank Co.
Graver Corporation
Kansas City Structural Steel Co.
Maloney Tank Co.
Parkersburg Rig & Reel Co.
Petroleum Iron Works
Pittsburgh-Des Moines Steel Co.
United Iron Works
Wyatt Metal & Boiler Works

Tank Equipment—
Continental Supply Company
Oil Conservation Engineering Co.

Temper Screws—
Burns Tool Co.

Tret-O-Lite—
W. S. Barnickel & Co.

Thermometers—
Continental Supply Company
Fort Worth Laboratories
The Foxboro Co., Inc.

Tongs—
Bridgeport Machine Co.
Continental Supply Company
Dunn Mfg. Co.
Guiberson Corp.
LeBus Rotary Tool Works
Pelican Well Tool & Supply Co.
Wilson & Willard Mfg. Co.
W-K-M Co.

Tool Joints—
American Well & Pros. Co.
Baash-Ross Tool Company
Boykin Machinery & Sup. Co.
Bridgeport Machine Co.
Continental Supply Company
Hughes Tool Co.
Pelican Well Tool & Sup. Co.
Regan Forge & Engineering Co.
Republic Supply Co.
W-K-M Co.

Tools (Fishing and Drilling)—
Bridgeport Machine Co.
Brown Welding & Machine Co.
Continental Supply Company
Frick-Reid Supply Co.
Hughes Tool Co.
International Supply Co.
Oil Well Supply Co.
Peden Iron & Steel Co.
Pelican Well Tool & Supply Co.
Regan Forge & Engineering Co.
Republic Supply Company
Sullivan Machinery Co.
Western Supply Company
W-K-M Co.

Toothless Slips—
LeBus Rotary Tool Works

Tractor Winch—
Rock Island Plow Co.

Traveling Blocks—
American Well & Pros. Co.
Baash-Ross Tool Company
Boykin Machinery & Sup. Co.
Continental Supply Company
Gulf Coast Machine & Sup. Co.
Lufkin Foundry & Machine Co.
Regan Forge & Engineering Co.

Tubing Catcher—
Continental Supply Company
Dunn Mfg. Co.
Guiberson Corp.

Tubing Lines—
Continental Supply Company
D. F. Connolly Agency

Tubing—
Continental Supply Company
Republic Supply Company
Reading Iron Co.
Standard Seamless Tube Co.
Superior Tube Co.

Underreamers—
American Well & Pros. Co.
Bridgeport Machine Co.
Continental Supply Company
Western Supply Company
Wilson & Willard Mfg. Co.

Vacuum Pumps—
Continental Supply Company
Sullivan Machinery Co.

Valves—
Bradford Motor Works
Continental Supply Company
Darling Valve & Mfg. Co.
The Charles N. Hough Mfg. Co.
Texas Oil Pump Co.
Ludlow Valve Mfg. Co.
Oil Conservation Engineering Co.
Pratt & Cady
Reading Steel Casting Co.
Reading Valve & Fittings Co.
Smith Separator Company
Southern Brass Mfg. & Plating Co.
Westcott Valve Mfg. Co.
W-K-M Co.

Valves and Fittings—
Continental Supply Company
Darling Valve & Mfg. Co.
D. & B. Pump & Sup. Co.
F. W. Heitmann Co.
Ludlow Valve Mfg. Co.
Lufkin Foundry & Machine Co.
The National Supply Cos.
Peden Iron & Steel Co.
Pittsburgh Reinforced Brazing and Machine Company.
Pratt & Cady
Republic Supply Company
Reading Steel Casting Co.
Reading Valve & Fittings Co.
United Iron Works
W-K-M Co.

Walking Beams—
Continental Supply Company
International Derrick & Equipment Company
Lee C. Moore & Co., Inc.

Welding and Cutting Equipment—
Continental Supply Company

Working Barrels—
Axelson Machine Co.
Bradford Motor Works
Continental Supply Company
D. & B. Pump & Sup. Co.
Republic Supply Company
The Charles N. Hough Mfg. Co.
Southern Brass Mfg. & Plating Co.
Texas Oil Pump Co.

Water Gauges—
Continental Supply Company
J. E. Shaffer Co.
F. W. Heitmann Co.

Water Cans—
Continental Supply Company
H. P. Gott Mfg. Co.

Wire Line Clamps—
Western Supply Company

Wire Rope—
American Cable Co.
Bridgeport Machine Co.
D. F. Connolly Agency
Continental Supply Company
Houston Oil Field Material Co.
International Supply Co.
Regan Forge & Engineering Co.
Republic Supply Company
The National Supply Cos.
Williamsport Wire Rope Co.

A jarrin' job is bad enough —but a strippin' job is worse!

When your well caves in, freezing the drill pipe, and a "pullin' job" is necessary, then comes a real test for both men and couplings.

If you don't pull the rig in on yourself or get only half the pipe you are lucky. Something has to come!

The terrific smash of the sinker-bar soon finds the weak spot in the line—and unless the couplings are as strong as the drill pipe you are up against a "strippin' job"—the bane of every operator and drill crew.

It is in these severe tests that Harrisburg Forged Seamless Steel Couplings prove their real worth. We have specialized in oil field steel—and it is from this high-test metal that Harrisburg couplings are made. Forged Seamless—no weld—no weakness—perfect thread and perfect taper—insuring a connection that will hold longer than the pipe.

HARRISBURG PIPE AND PIPE BENDING CO.

HARRISBURG, PA.

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Superior Tube Company, Tulsa, Okla.

HARRISBURG

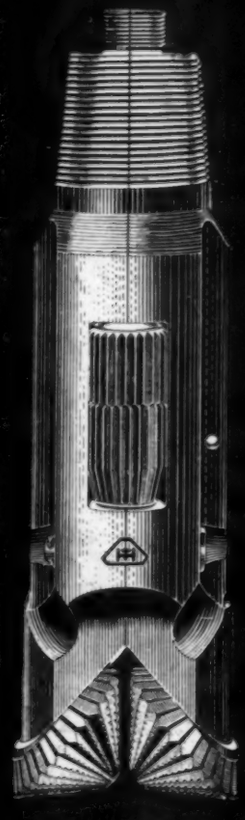
Forged Seamless Steel Couplings

The Eiffel Tower was constructed by A. G. Eiffel in Paris, France, for the Paris Exposition in 1889. Its original purpose was to carry out the ideal of the builder in constructing the world's loftiest structure.

It is of steel construction, 984½ feet high. It has three floors or stops, served by elevator. Restaurants and refreshment stands are located on these floors. A trip to the top of the tower costs about 15 cents. During the war the tower was very valuable as a wireless station.

JUST as the Eiffel Tower stands as a tribute to a great engineer—Hughes Rotary Drilling Tools, in every day accomplishment, stand as the engineers' answer in correctly solving the problems of Rotary drilling.

Embodied in every Hughes Product is the knowledge of expert engineers who have made long and careful study of oil field conditions throughout the United States and foreign fields.



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